USER'S MANUAL

HYDRAULIC 4 ROLLS PLATE BENDING MACHINE

4R HSS 320

CE DECLARATION

We as

confirm that the machine

HYDRAULIC 4 ROLLS PLATE BENDING MACHINE

4R HSS 320

Serial Number :
Production Year :

complies with

EC MACHINES DIRECTIVE 98 / 37 / EWG / CEE

REPLACED WITH EC – DIRECTIVES 91 / 368 / EWG ;
93 / 44 EWG ; 93 / 68 CEE
EC – LOW VOLTAGE 73 / 23 / EWG
EC – NOISE LEVEL DIRECTIVES 86 / 188 / EWG

and the machine also harmonized with the standards .

TS EN 60204 Part 1

NAME : MUSTAFA PINARBAŞI
POSITION : PRODUCTION MANAGER

BURSA, ...

DANGER OF ELECTRIC

EMERGENCY STOP

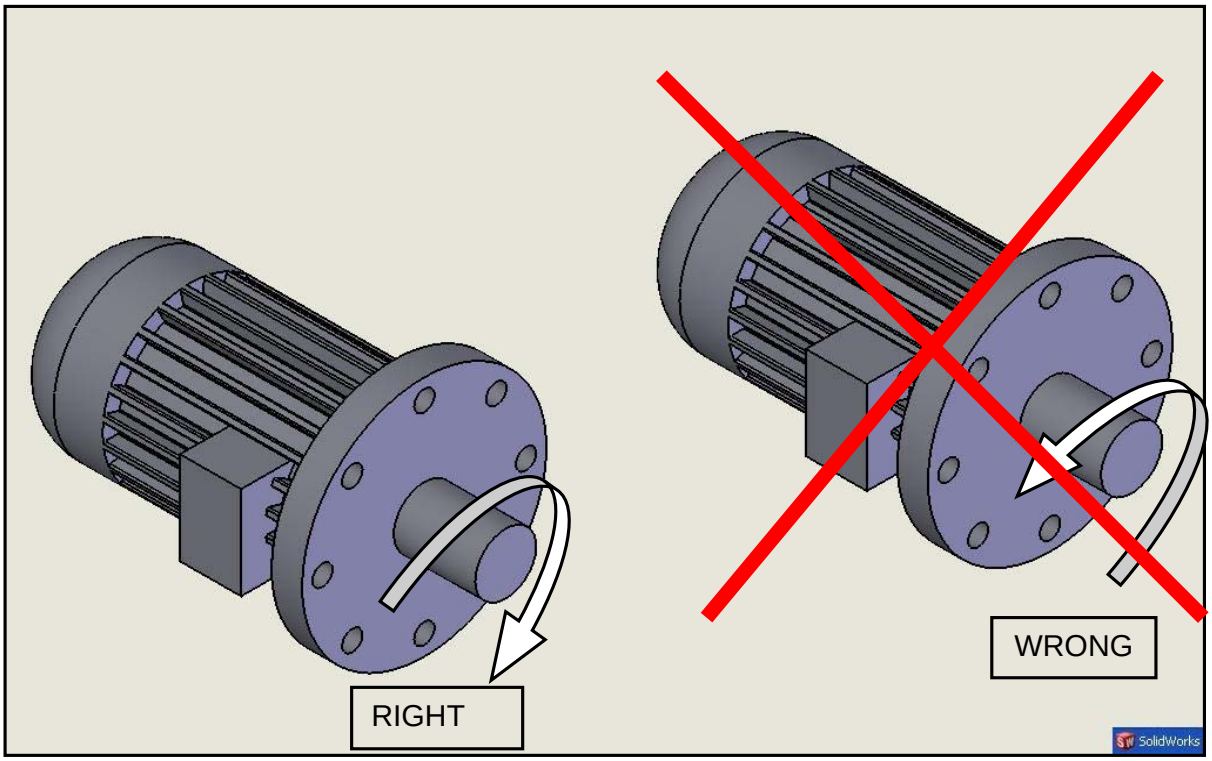
GROUNDING SYSTEM

WORKING VOLTAGE

ATTENTION

BEFORE OPERATING MACHINE

YOU MUST FOLLOW THESE IMPORTANT STEPS



1. *Open the cover and check the direction of motor rotation.*
2. *If motor rotation direction is wrong , then change L1 – L2 cables with each other.*

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1. GENERAL NOTES

Thank you for choosing a Şahinler sheet / Metal Working Machine. We are proud to have you in our long list of satisfied customers all over the world.

In this manual you can find instructions and information about ;

- *Correct installations of the machine*
- *Description of the functional parts of the machine*
- *Set – up and start – up adjustments*
- *Correct standard and schedules maintenance*
- *Simple safety regulations and accident prevention*

Attention : *Showing the risks of accident , if instructions are not followed.*

Warring : *Showing the probable damages to the machine or equipment , if the instructions are not strictly followed*

Note : *It gives useful information*

It is certainly necessary that the operator should read and understand all the attention , warring , note specified in this manual before starting with operation of the machine and before any lubrication or maintenance intervertion.

Remove any protective crates around the machine and read the intructions on related chapters of this manual carefully to set up the machine. If the machine is damaged while transport , immediately take some photographs for insurance claims.

All necessary connection procedure can be found on this manual. Have the machine connected by a qualified electric technician. Our factory is not responsible for damages because of electricity connections.

Your machine is designed and produced to work efficiently and smoothly. To achieve this you should also take care while operating the machine. Regard maintenance sections to have the longest live from your machine. Try and use original spare parts where necessary and most importantly do not overload the machine or do not make any unauthorized modifications.

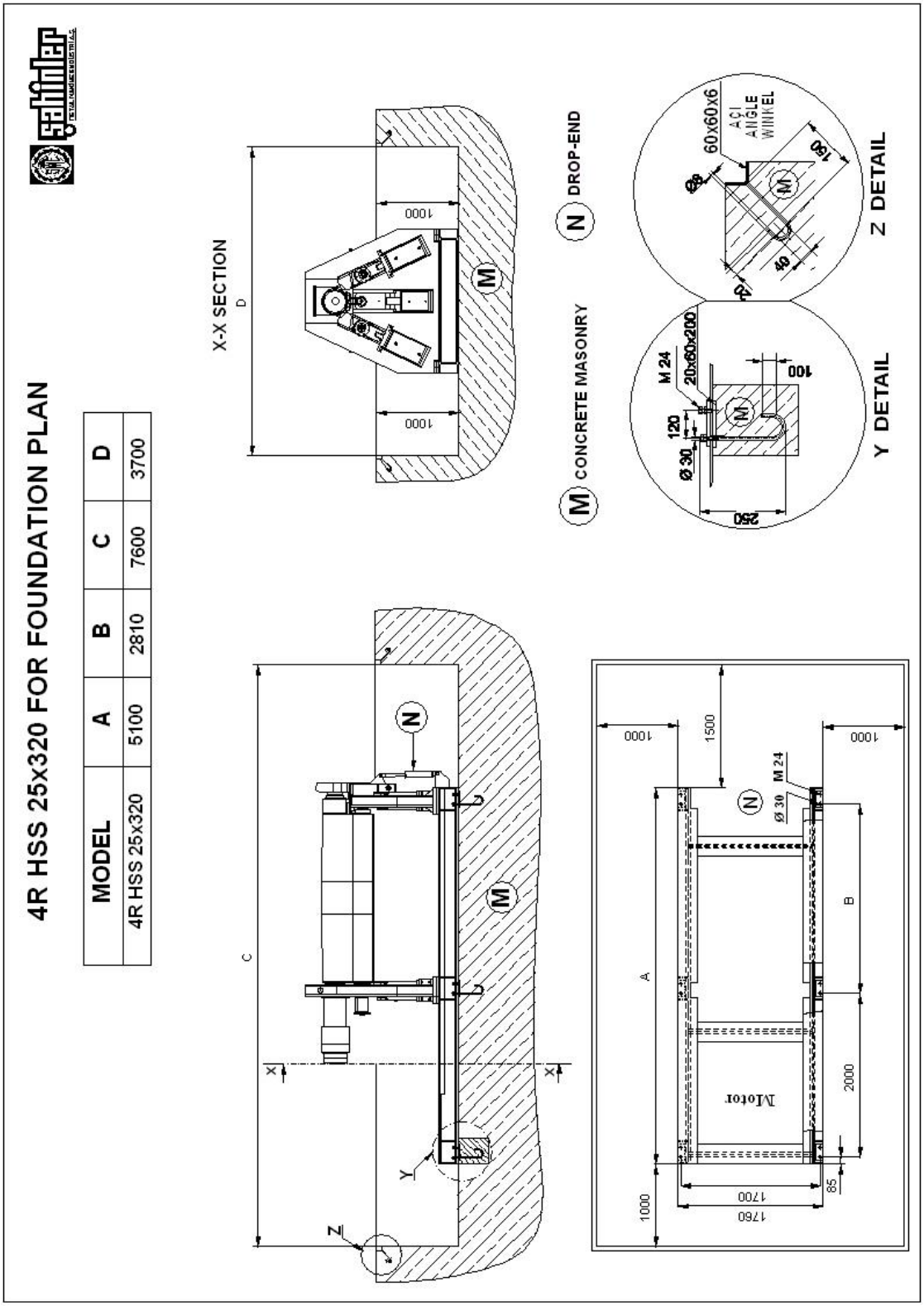
Take all precautions possible to avoid any personnel injury while using the machine. Keep in mind to Project the third party people around the machine. Refer to safety directives

2. IMPORTANT SAFETY TERMS

Following instructions are meant for the operator of the machine and it is the end user's responsibility to make sure that the operator reads and understands the following.

- *Machine must be used by a trained operator who can notice working risks.*
- *Use the machine according to the factory working rules and directions in catalogue.*
- *Machine is designed for working only in technical capacities which are shown in catalogue. Machine must not be used out of it's technical capacities. Manufacturer is not responsible for damages that can happen.*
- *Manufacturer is not responsible for the damages that can happen for wrong electricity connections.*
- *Never touch rotating or moving parts.*
- *Keep your working dress or long hair or necklace etc away from rotation parts.*
- *Make sure you know the position of emergency stop buttons on the machine.*
- *In any emergency situation please push the emergency button and follow the emergency rules.*
- *Work with necessary safety clothes if necessary (safety shoes , glasses , earplugs etc).*
- *See and understand safety labels on the machine.*
- *Be careful of other people around the machine during operation.*
- *Never modify electric units and table*
- *Do not remove any electronic or mechanical parts of the machine.*
- *Do not make any modifications on the machine without manufacturer's acceptance. These modifications can effect the machine safety specifications and CE regulations.*
- *Do not overload the machine*
- *Switch off the machine when not working.*
- *Be extremely careful during transport or replacement of the machine and follow transport instructions in the manual to safely handle the machine.*
- *During the bending operation do not touch and approach the material.*
- *Do not operate the machine in rusty places and do not use rust materials.*

3. GENERAL DRAWING OF THE MACHINE



4. TRANSPORTATION

Machine must be carried with crane and must be lift up from the centre of gravity. Keep away from sudden actions that damage the machine.

Customer must control the machine functions after transportation to see if everything is O.K.

- *Always carry and lift up the machine following Shown points. Take precaution on the carrying and lifting situations.*
- *If the machine's balance position is not suitable set it to the suitable position.*
- *Lift up the machine carefully keep away from sudden speed and sudden side changing's.*
- *In the mounting place move slowly when the machine touch with the floor.*

Machine Type	Weight
4R HSS 20 - 320	9 Ton
4R HSS 25 - 320	11 Ton
4R HSS 30 - 320	13 Ton
4R HSS 40 - 320	16 Ton

5. SETUP INSTRUCTIONS

- *Control the electricity Lines before the machine arrives.*
- *For machine place consider your best and easy production area*
- *Machine mounting floor must be flat , strong and without holes. Defective and insecure places can spoil machine balance.*
- *Provide a suitable and enough lightened place*
- *Make sure that your machine is balanced on the ground.*

6. TECHNICAL PROPERTIES

Model	Unit	4R HSS 20 320	4R HSS 25 320	4R HSS 30 320	4R HSS 40 320
Without Prebending Ø x 5 Diameter	mm	25	20	16	10
With Prebending Ø x 5 / Without Prebending Ø x 1,5	mm	20	16	12	8
With Prebending Ø x 1,5 Diameter	mm	16	12	10	6
Bottom Roll Diameter	Ø mm	320	320	320	320
Side Rolls Diameter	Ø mm	240	240	240	240
Motor Power	Kw	18 , 5	18 , 5	18 , 5	18 , 5
Working Speed	m/Min	1,5 - 5	1,5 - 5	1,5 - 5	1,5 - 5
Machine Dimensions	mm	4700x1800x1900	5200x1800x1900	5700x1800x1900	6700x1800x1900
Roll Lenght	mm	2050	2550	3100	4100
Useful Lenght	mm	2000	2500	3000	4000
Weight	Kg	9000	11000	13000	16000

Note : *Machine dimensions are approximate.*

6 . 1 TECHNICAL SPECIFICATIONS AND STANDARD EQUIPMENT'S

- *The machine is particularly suitable for medium plate for the production of ferrules in automatic cycle with or without cnc system varying radiused parts with or without axis interpolation.*
- *Bottom pinching roll with hydraulic positioning.*
- *Two lateral rolls with double pinch pyramid action (Bottom pinching and lateral rolls with balancing system to guarantee perfect parallelism and high quality production).*
- *Top roll is driven by hydraulic motor coupled to the planetary speed reducer.*
- *Movement of the lateral rolls is carried out by means of pistons.*
- *Digital displays are provided for locating setting of roll positions.*
- *Hydraulic drop end for ease of cylinder removal.*
- *All control operations are conveniently located on an independent control console.*
- *Steel welded heavy frame construction , thermally stress relieved*
- *Induction hardened rolls are of high tensile carbon steel forging , heat treated and submitted ton on destructive structure controls.*
- *Conical bending device.*
- *Hydraulic elements ; motor and pump group , pressure valves , solenoid valves , oil display and etc. Bosch , Rexroth or Duplomatic used.*
- *Emergency system ; safety string barrier around the machine and emergency push button*
- *Electric equipment's ; Siemens or Telemecanique*
- *Machine equipped with two speed working system which is controlled from independent control console.*
- *Built according to EC safety directives (CE Mark)*
- *User's manual*
- *Roll material is SAE 1050 and it is hardened*

7. OPERATING INSTRUCTIONS

Your machine is equipped with a phase sequencer. If the electric connection is wrong the machine will not start up . Reverse the main electric cables and try again.

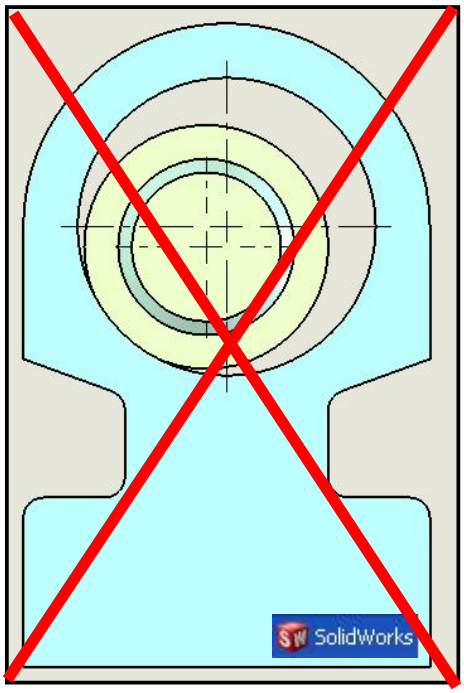
When you see the power on indicator press the start button. The motor should start up and after a few seconds you should hear the machine running.

Test the movements of the machine by pressing rotation and piston buttons.

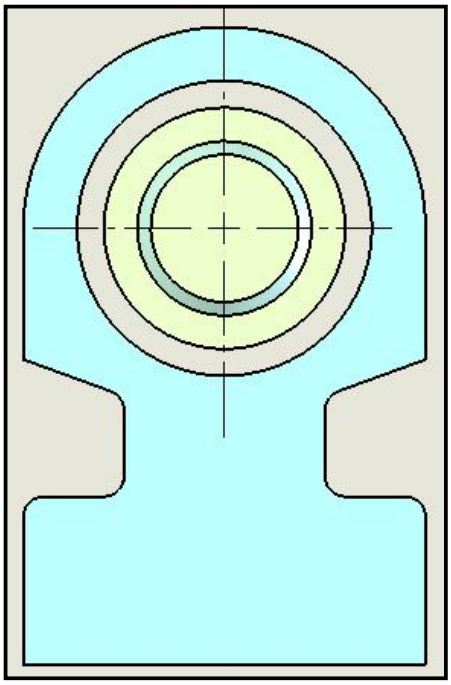
No	Button Name	No	Button Name
1	Switch On / Off	12	Pinching Roll Conical Up - Down
2	Start Button	13	Pinching Roll Up - Down
3	Stop Button	14	Oil Temperature Indicator
4	Rolls Clock Wise Rotation Button	15	Right Support Up - Down
5	Digital Read - Outs	16	Right Roll Conical
6	Power On	17	Right Roll Up - Down
7	Left Support Up - Down	18	Reset
8	Left Roll Conical Up - Down	19	Fast - Slow Rotation Swich
9	Left Roll Up - Down	20	Bracket Open - Close Swich
10	Emergency Stop	21	Rolls Counter Clock Wise Rotation Button
11	Lift Up - Down		

7 . 1 EXPLANATION OF FOUNDATION PLAN

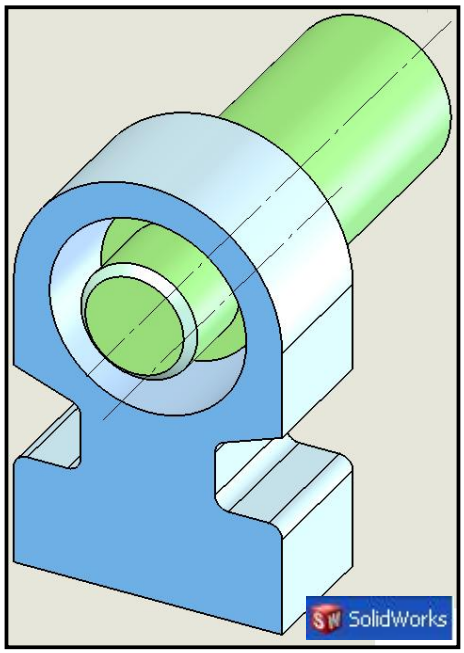
Before proceeding to the bending operation in the machine, open the bracket on the front part and verify if the upper roll enters the bracket in a symmetrical manner. If there is any deviation, first of all adjust such deviation through the balancing bolts in the safe and then start to work.

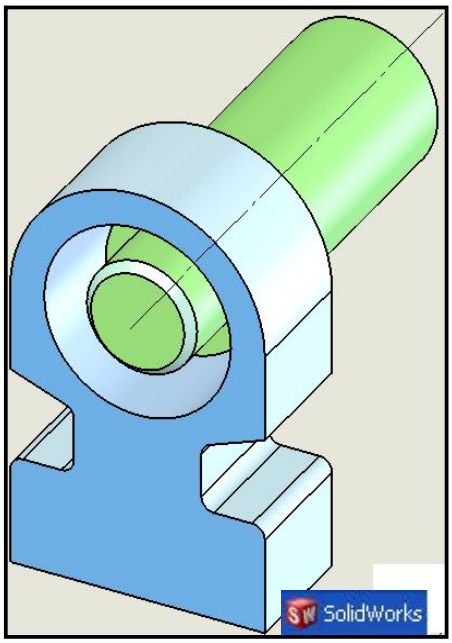


WRONG



RIGHT





7 . 2 EMERGENCY STOP

The machine has one emergency stop and emergency stop wire around the machine If the machine is stopped by pushing one of these the PLC must be Reset before starting

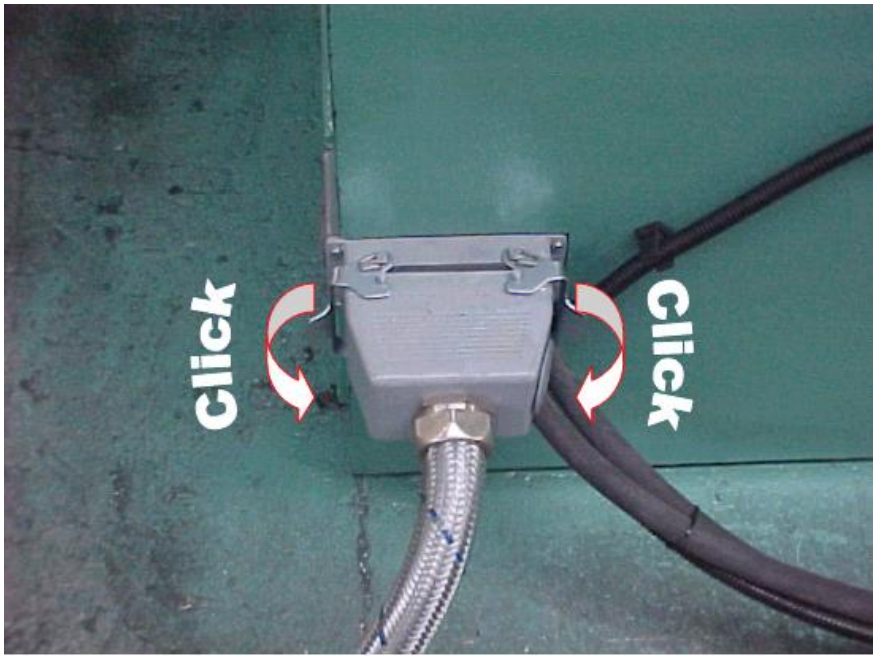
- *Release the emergency stop button or switch on the emergency wire*
- *Push Reset button*
- *Push start button.*

7 . 3 THERMAL OVERLOAD OR OIL TEMPERATURE

If the thermal overload indicator is on it means the motor is disabled by the system to protect it from burning. The motor is overheated due to a problem and must cool down before restarting. Do not restart the motor at least 10 minutes. Let it cool down and try to find the problem. Do not restart the machine until the problem is solved.

7 . 4 ELECTRIC CONNECTION

Please bring the plug near the machine and connect like as shown below.

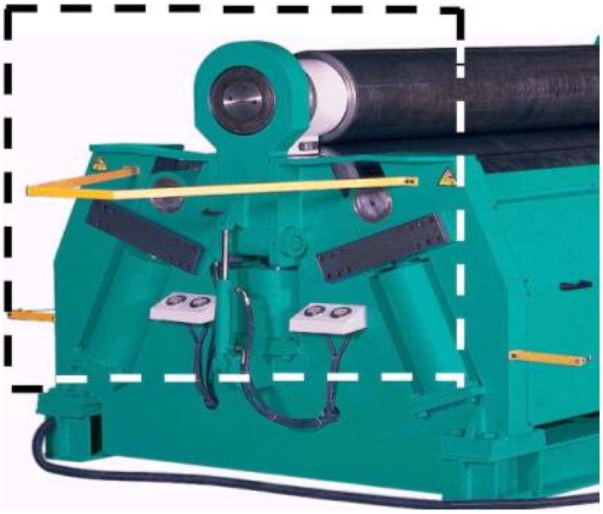


8. SAFETY DIRECTIVES

The ŞAHİNLER A.Ş. four – roll plate bending machine is supplied with necessary guards to protect from injuries by worm – type gearbox and other gears. The only other area which needs to carefully monitored during use is the rotational area of the rolls.

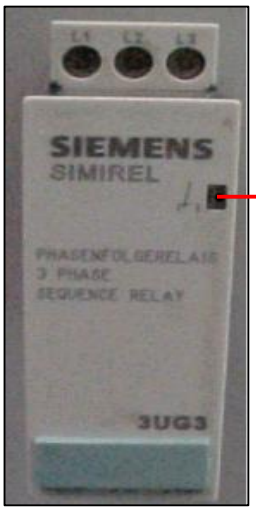
8 . 1 DANGER ZONES

The below shown danger zones must be kept clear during operation



8 . 2 INVERSE ELECTRIC PROTECTION

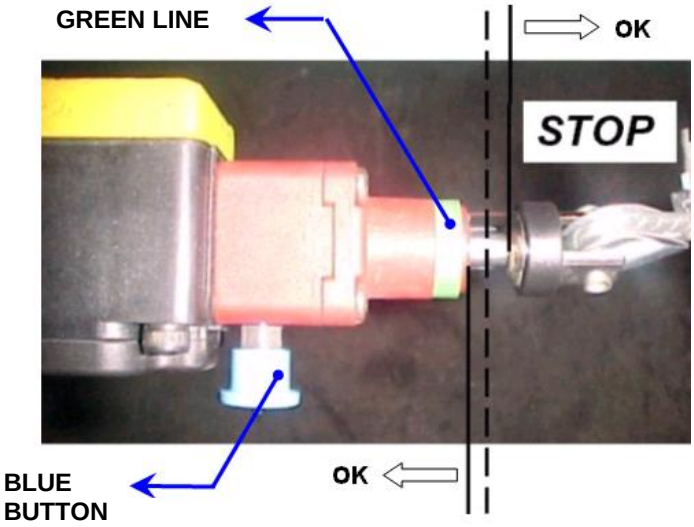
If the electrical connection of the machine is wrong the phase protection device activates and cuts off any electric supply to protect the hydraulic pumps from inverse rotating and burning out. Only when its connected Correct the relay light will light up and the machine will operate



YELLOW - OK

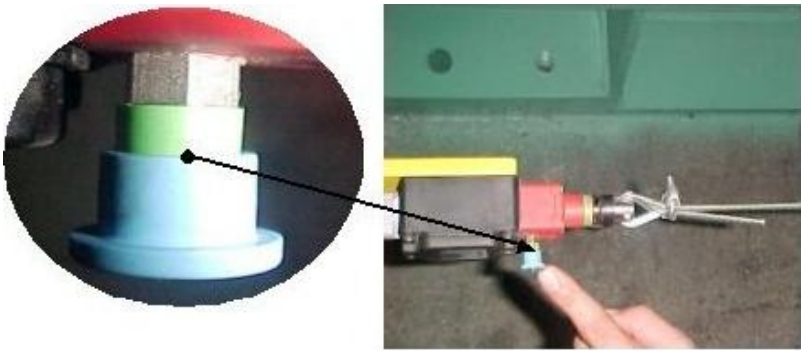
8 . 3 EXPLANATION FOR SAFETY SWITCH

The machine has been equipped with a security switch and wire for the operators safety when the safety wire is pushed it pulls the below shown ring this act as emergency stop and stops all machine activity.

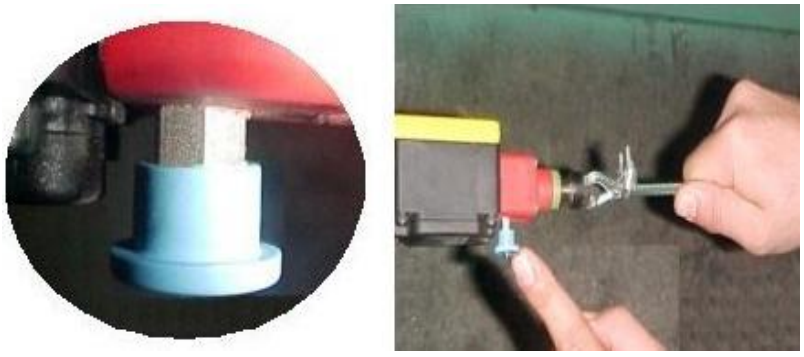


- *To restart the blue knob (fig. 1)*
- *While pulling the safety wire when engaged you should see green (fig. 2)line under the blue knob*
- *Now you can restart the machine from control panel.*

Safety switch's on and off positions as given below

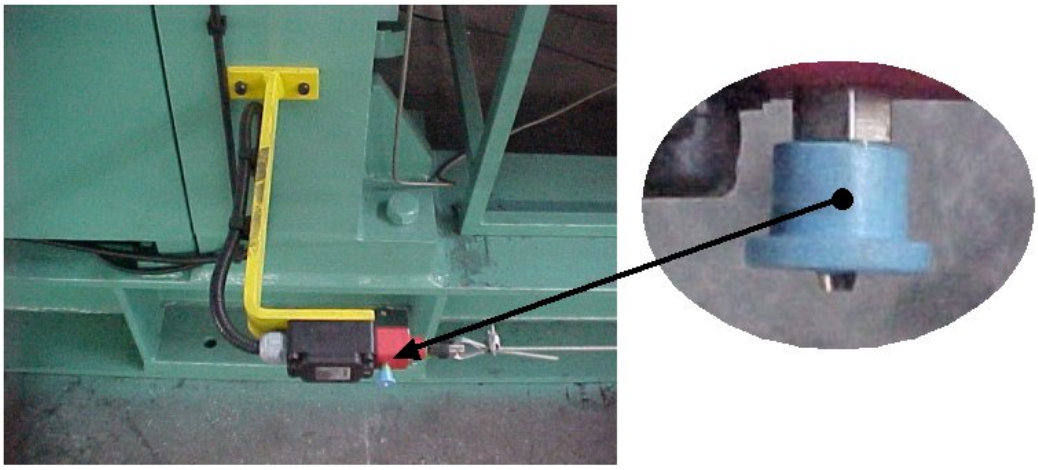


Switch on position.



Switch off position

The safety wire comes unassembled for packing reasons and must be assembled by the customer as shown above to completely surround the machine

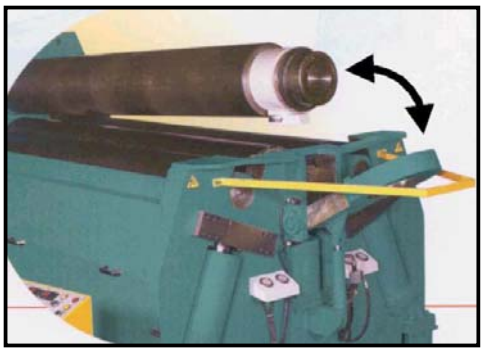


8 . 4 DROP - END

If for any reason emergency button is used during opening and closing of the drop end arm , it will stop instantly

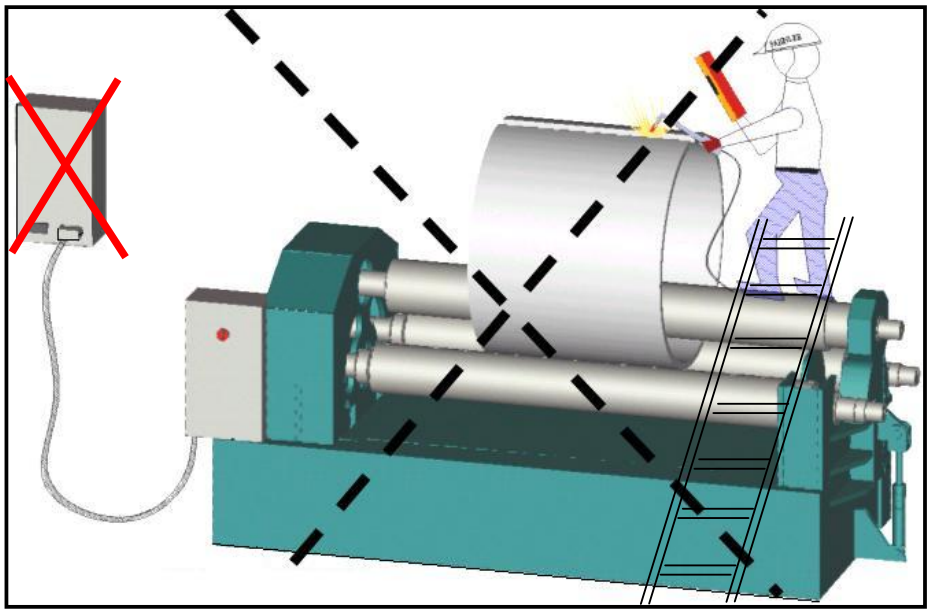
After the emergency button is released and Reset button is pushed you must use the start button to restart the machine.

Emergency stop pushed

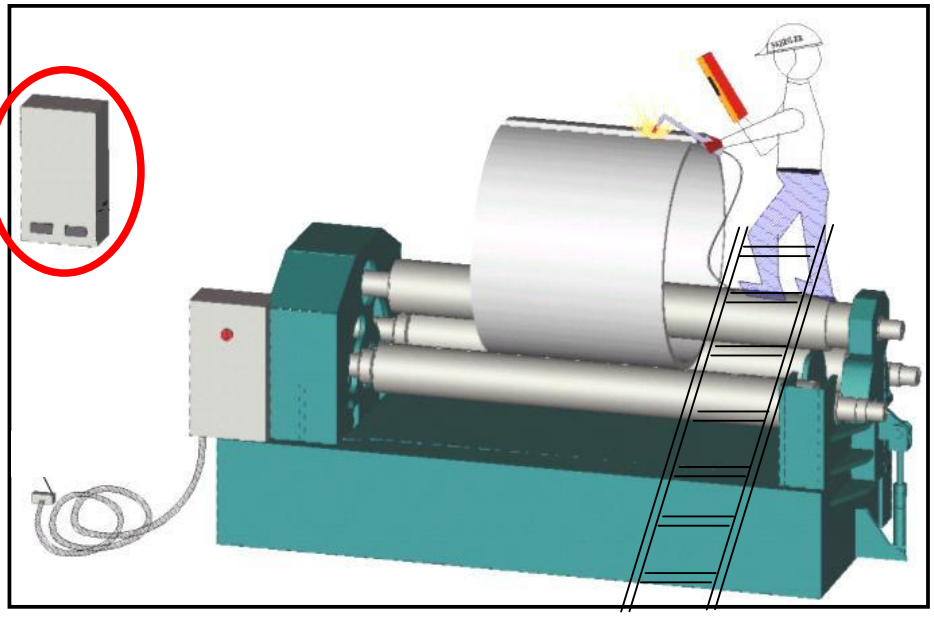


Emergency stop released
Reset pushed
Start pushed

8 . 5 IMPORTANT POINTS ON WELDING OPERATIONS



*You must **disconnect the machine from electric** before welding operationo*



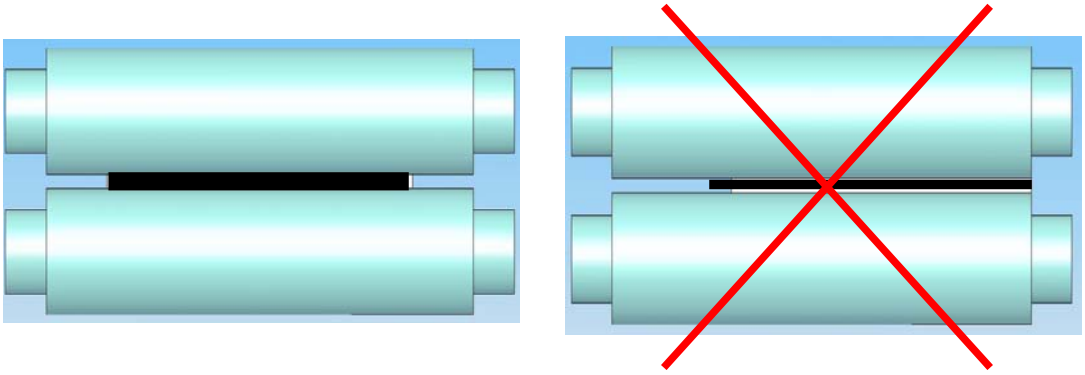
9. BENDING OPERATIONS

9 . 1 PRE – BENDING

Pre – bending is the operation where the edges of the material is bent to the same radius of the end radius. This is used to get best results in full circle bending

Before Operation ;

- *Clean the material and the rolls of dust or grease.*
- *Make sure there are no chips or flame cutting left – over on the edges of the material*
- *Make sure the material is flat.*
- *It's a good idea to have template of the required radius when making a bend. To make a template cut a hard cardboard or cartoon piece with the necessary radius.*
- *Always work in the center of the rolls as shown .*



In order to achieve desired parameters , after every turn of the material you shall lift the bottom rolls step by step and after catching correct diameter of the material you can catch parameters for DRO

In order to make a full circle , you shall do pre bending and after catch the two edges of the material and do point welding and turn the welded material once or twice more on the machine to have a perfect circle.

9 . 2 BENDING OPERATIONS

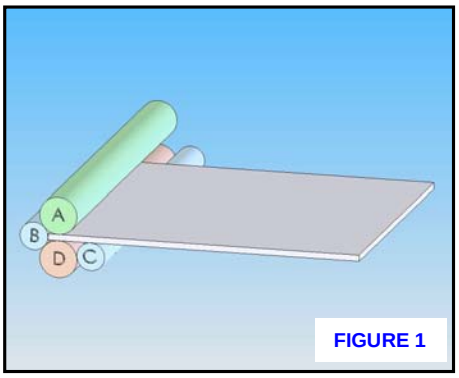


FIGURE 1

First of all , as shown in the Figure centre the B roll and the material axis.

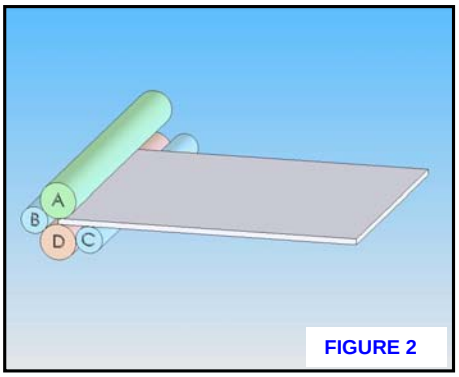


FIGURE 2

Lift roll D and pinch the material

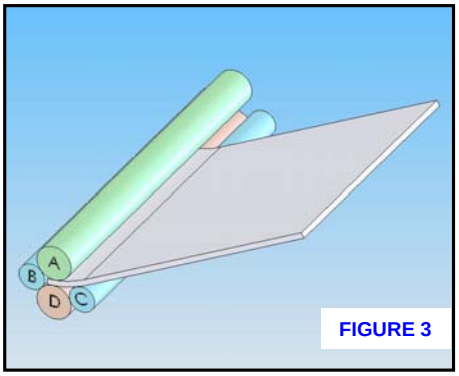


FIGURE 3

Use control panel and move the material to the center of top roll. Now your plate is ready to bend

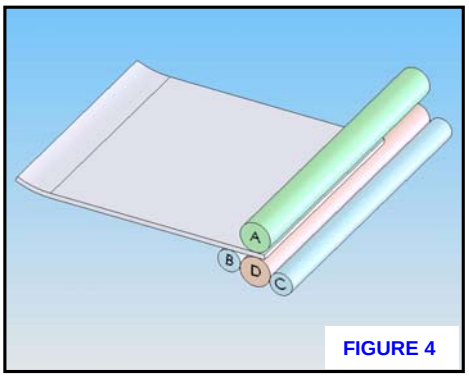


FIGURE 4

Pre – Bending lift roll C to start pre-bending. Bend the edge of the material according to final diameter.

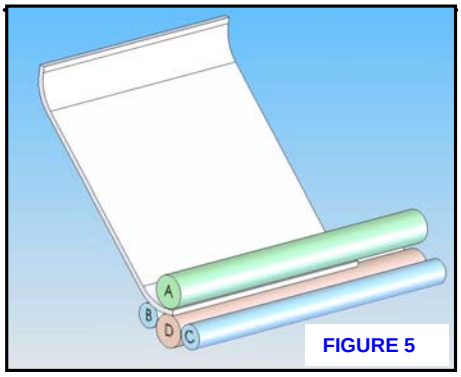


FIGURE 5

Lower roll C and pass the material to the other side

Repeat pre-bending on other and

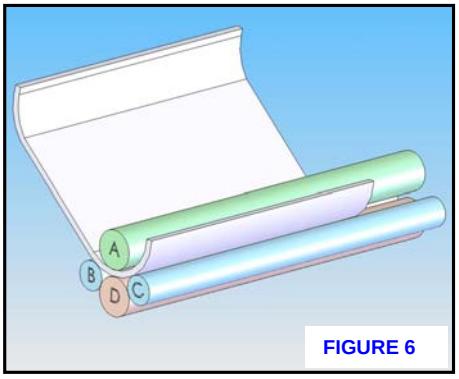


FIGURE 6

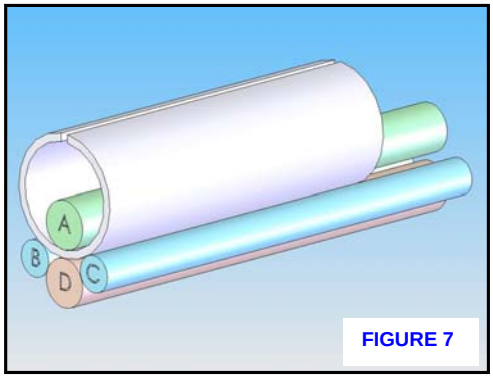


FIGURE 7

Start rolling the material until you get the required radius. It is normal to make several passes before getting the job done but remember that with less passes you get better finished material.

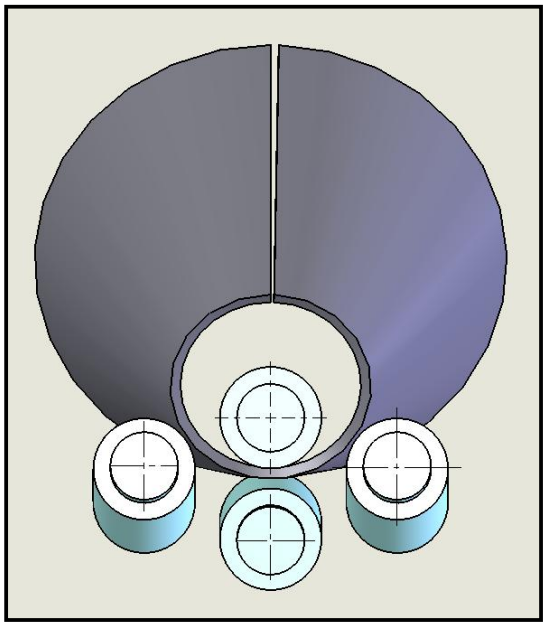
NOTE : *If you are working with stainless steel it is important to finish the job in a few passes. Because the work hardens and it becomes progressively harder after each pass.*

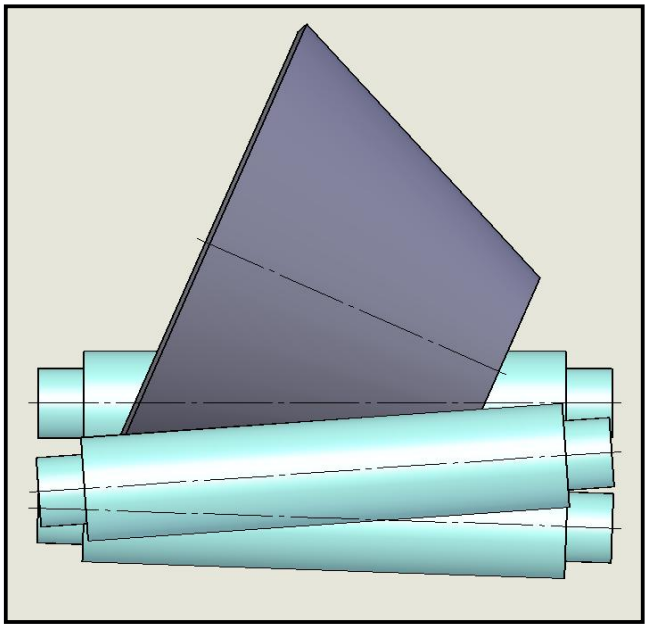
9 . 3 CONICAL BENDING

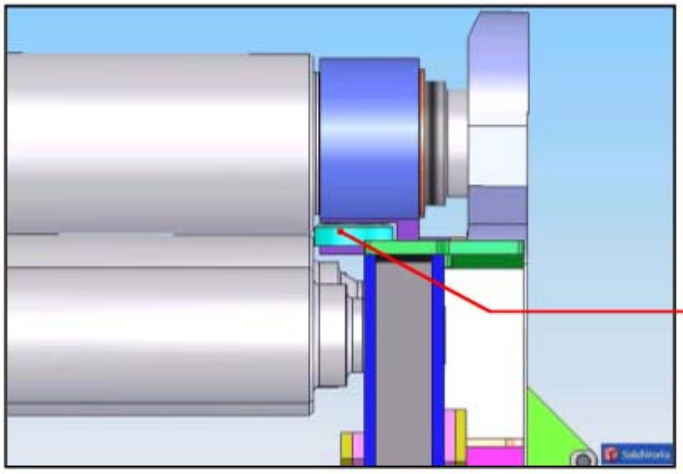
Although the bending procedure is the same as above , while making the conical bend the small side of the material must be against by the conical bending device and the pinching roll must be adjusted in a tilted way as shown in figure.

Be sure to clean any oil or grease put on the rolls before operation.

When cone bending , the thickness and width capacities of the machine are reduced. Check with the distributor or manufacturer for your requirements.







The part indicated by no.1 has been designed and hardened for supporting the part of the plate held aganist it during the conical bending operation. Note the zoom position and detail parts as below.

10. PERIODIC MAINTENANCE

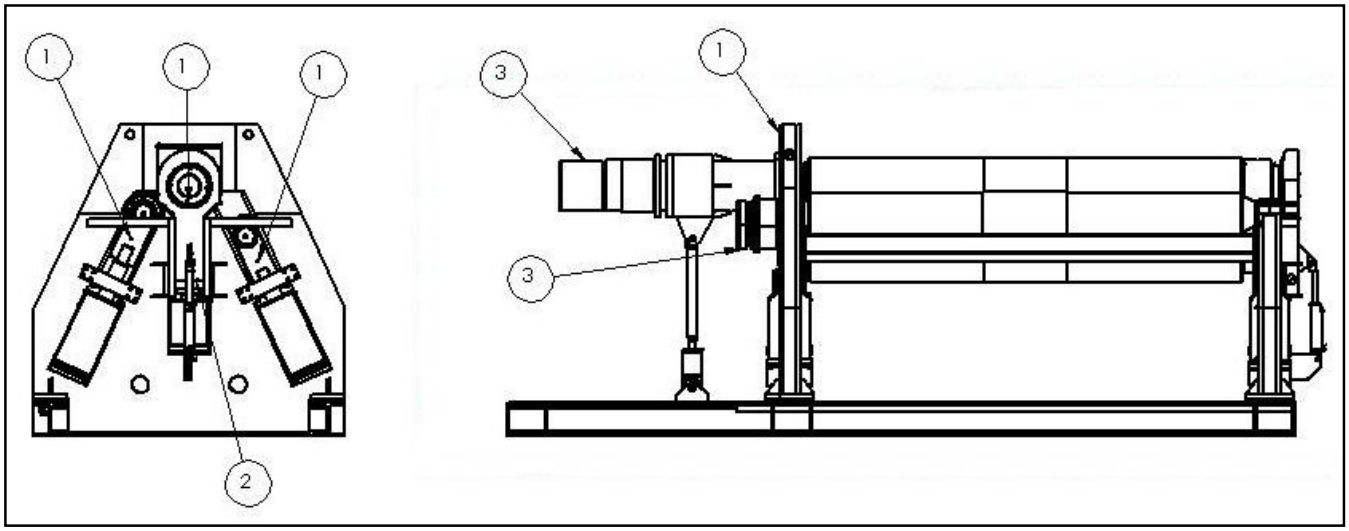
Machine general maintenance and cleaning must be carefully done. Because of this machine must be turned off before starting the maintenance.

Control types and times ;

Control	Time	Responsible
Grease oil control	Daily	Operator
Hydraulic oil lever control	Daily	Operator
Mobile control cable control	Weekly	Operator
Machine working control	Weekly	Operator
Controling the cables and hose against damage	Weekly	Operator
Cleaning the machine	Weekly	Operator
Checking the oil filter	Mounthly	Approve
Checking the oil recuder bolts	Mounthly	Operator
Checking hydraulic circuit	Yearly	Approve
Clean and empty hydraulic tank	Yearly	Operator

10 . 1 PERIODIC CONTROLS and SCHEME

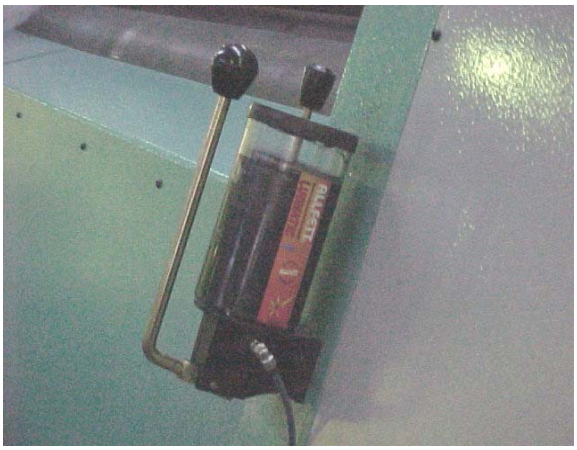
- *The bushings shown as (1) on the drawing are lubricated by the lubrication system. However they must be greased manually once every two weeks by hand also.*
- *The bushings shown as (2) on the drawing must be greased manually once a month.*
- *The reducers shown as (3) must be controlled periodically. Refer to manufactured instruction manual for maintenance of the reducers.*

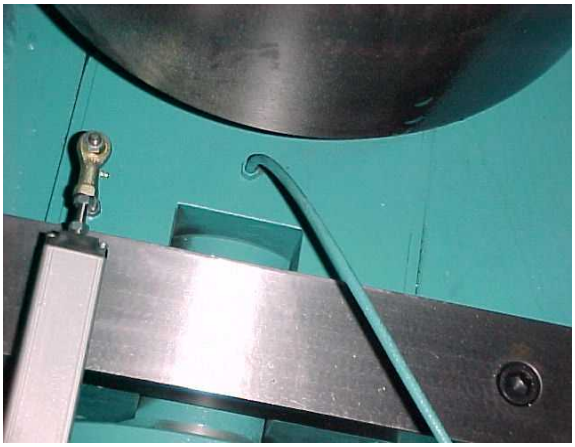


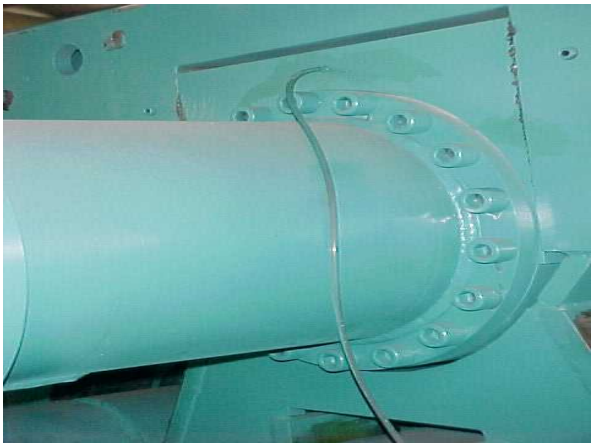
10 . 2 LUBRICATION

As all mechanical machines this machine also needs to be lubricated periodically. Check the lubrication plan for reference to lubrication points.

Central greasing system ;







Your machine is equipped with a centralized greasing system. It Works manually but very simple to use. All you have to do is to pull the lever on the greasing unit. times everyday before you start working the machine the system lubricates all mechanical moving parts and slides.

To Avoid Damage To Bushings

Sometimes the central lubrication hoses can be broken or clogged. If the bushings are not lubricated they will be worn out very quickly. To avoid damage to bushings. CHECK VISUALLY ALL BRONZE BUSHINGS THAT THEY HAVE GREASE ON THEM if the are dry inspect the central lubrication hoses and manually grease the dry bushings.

11.HYDRAULIC MAINTENANCE

Generally we recommend the use of Shell Tellus Nr.46 and BP Energol Nr.46 for hydraulic systems. We recommend to change hydraulic oil once every two years.

Brand	Work temperature >20°C	Work temperature < 20°C
Agip	OSO 32	OSO 46
BP	Energol HLP 32	Energol HLP 46
Castro	Hyspin AWS 32	Hyspin AWS 46
Elf	Elfolna 32	Elfolna 46
Esso	Nuto H 32	Nuto H 46
Fina	Hydran 32	Hydran 46
IP	Hydrus 32	Hydrus 46
Mobil	DTE 24	DTE 25
Q8	Haydn 32	Haydn 46
Shell	Tellus 32	Tellus 46
Texaco	Rando HD 32	Rando HD 46
Total	Azolla ZS 32	Azolla ZS 46

11 . 1 PERIODICALLY CONTROL THE FILTER

To change the filter

- *Open the cover (1) by turning it to counter - clockwise*
- *Change the filter element*
- *Close the cover by turning it to clockwise*

Filter must be changed , when filter's pointer got red zone. Also you shall check filter frequently.

12. HYDRAULIC PLAN and LİST

Hidrolik sistem 22 kw' lik trifaze motor tahriki ile dişli pompanın depodan yağı emilip silindire basması prensibi ile çalışır.

HİDROLİK PLAN LİSTESİ

13.GENERAL WARRANTY TERMS

All the machines are tested and quality checked before leaving the factory. Foundation and montage of the machine is on customers responsibility.

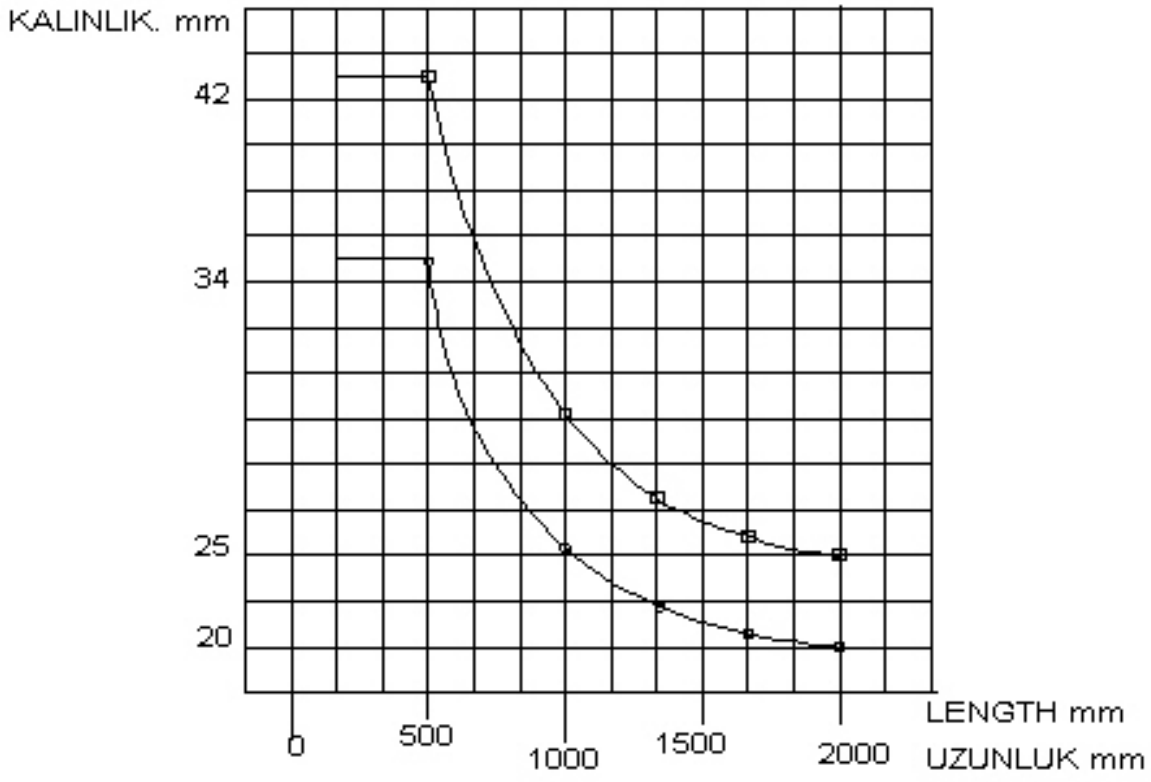
the customer may request foundation , training and commissioning of the machine from Şahinler by technicians an a service cost

- *Your machine is covered by manufacturer's guarantee for a period of **12 months** from the date of purchase against manufacture defects. The warranty period does not exceed **12 months** from the date of delivery from the manufacturer's factory.*
- *Warranty covers only manufacture defective parts and / or components that are reported as " defective " by a Şahinler technician or the agent technician and must be reported to Şahinler in writing by fax or e-mail.*
- *The manufacturer is responsible for the supply of free of charge spares only and cannot be held responsible for loss of work.*
- *Shipping and customs fees for the spare part must be paid by the end - user.*
- *If a technician travel is necessary Şahinler will not charge for labor and workmanship costs but the customer must pay traveling and accommodation charges.*
- *A warranty claim does not relieve the customer from payment obligations.*
- *The customer can not ask or demand any reimbursement of damage nor the customer will have the right to extend or delay payment obligations nor the cancellation of order and the refunding of damages as the guarantee is given for the defective parts of the machine and not for the job.*

PLATE BENDING ROLL

MOD. 4R HSS 20-320

KAPASITE CAP=1600 mm BORU ICIN HESAPLANMISTIR
CAPACITIES CALCULATED FOR TUBE INSIDE DIAMETER=1600 mm



BENDING THICKNESS / BUKME KALINLIGI

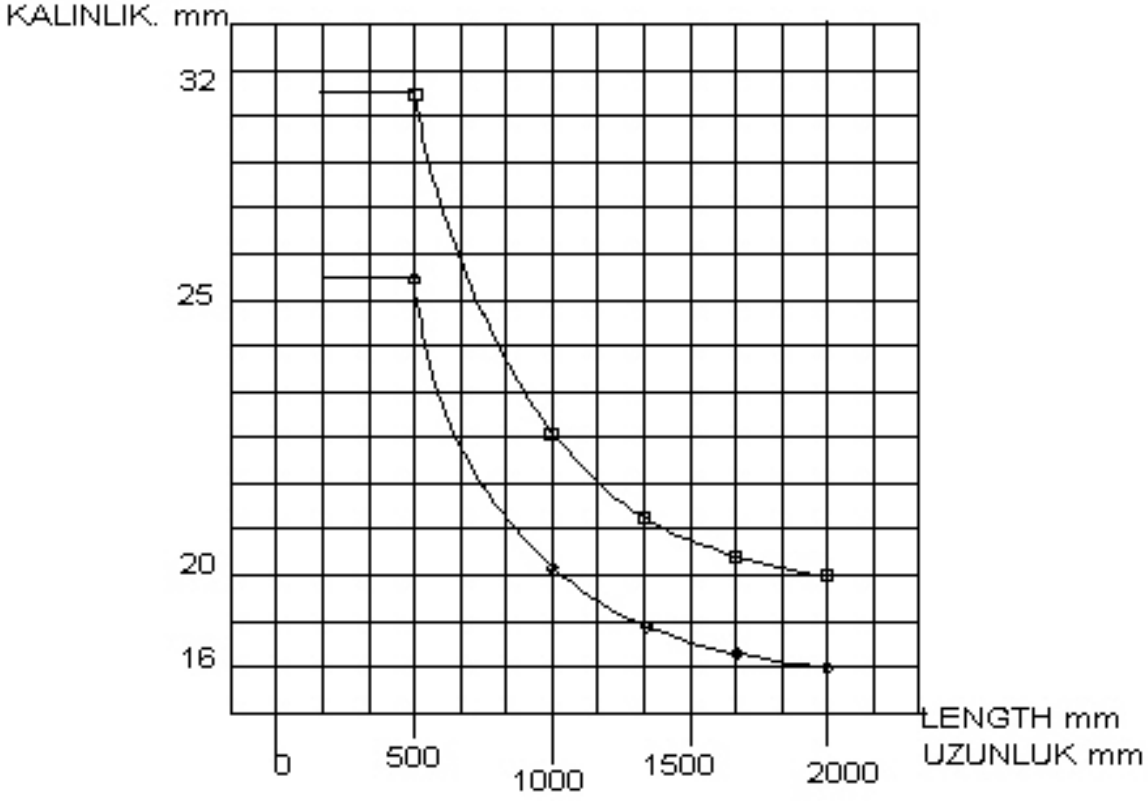
PREBENDING THICKNESS / ON KIVIRMALI BUKME KALINLIGI

MATERIAL Y.P.=24Kg/sqmm
MALZEME Y.P.=24Kg/sqmm

PLATE BENDING ROLL

MOD. 4R HSS 20-320

KAPASITE CAP=480 mm BORU ICIN HESAPLANMISTIR
CAPACITIES CALCULATED FOR TUBE INSIDE DIAMETER=480mm



BENDING THICKNESS / BUKME KALINLIGI

PREBENDING THICKNESS / ON KIVIRMALI BUKME KALINLIGI

MATERIAL Y.P.=24Kg/sqmm
MALZEME Y.P.=24Kg/sqmm

MOTOR VOLTAGE - CURRENT CABLE VALUES

KW / HP	220-240 V (50Hz/60Hz)			380-400 V (50Hz/60Hz)			415 V (50Hz/60Hz)			440 V (50Hz/60Hz)			575 V (50Hz/60Hz)		
	A	A	q mm²	A	A	q mm²	A	A	q mm²	A	A	q mm²	A	A	q mm²
3 / 4	16	11.5	1.5	10	7	1.5	10	6.5	1.5	10	6	1.5	6	3.5	1.5
4 / 5,5	25	14.5	1.5	16	8.5	1.5	16	8	1.5	16	8	1.5	10	5	1.5
5,5 / 7,5	25	20	2.5	16	11.5	1.5	16	11	1.5	16	10	1.5	16	8	1.5
7,5 / 10	32	27	6	25	15.5	2.5	25	14	2.5	20	14	2.5	16	10	1.5
11 / 15	50	39	10	32	22	4	32	21	4	32	20	4	25	16.5	2.5
15 / 20	63	52	16	40	30	6	40	28	6	32	26.5	6	24	20.5	4
18,5 / 25	80	64	16	50	37	10	50	35	10	40	33	10	40	21	4
22 / 30	80	75	25	63	44	10	50	40	10	50	39	10	40	26	6
30 / 40	125	103	35	80	60	16	63	55	16	63	51.5	16	50	32	10
37 / 50	150	126	50	100	72	25	80	66	25	80	64	25	63	50	16
55 / 75	200	182	95	125	105	35	125	100	35	100	90	35	80	70	25

HSS 4R HSS 25x320 HYDRAULIC PART LIST
HİDROLİK PARÇA LİSTESİ

NO	AÇIKLAMA / DESCRIPTION	KOD NO CODE NO	ADET PIECE	MARKA MODEL
1	**YAĞ TANKI** / HYDRAULIC TANK	350 LT	1	ŞAHİNLER
2	**YAĞ SEVİYE ŞALTERİ**/LEVEL POWER SWITCH	FSK254-2X/C-12	1	HYDAC
3	**YAĞ DOLDURMA KAPAĞI**/ OIL TANK CAP	FT8-C40/1	1	FILTREC
4	**DÖNÜŞ FİLTRESİ**/RETURN FILTER	TEF 320	1	INTERNORMEN
5	**DİŞLİ POMPA**/GEAR PUMP	3Mb39+2Mb14,5+2Mb10	1	SALAMI
6	**ELASTİK KAPLİN**/COUPLING	DK55	1	HASEL
7	**ELEKTRİK MOTORU**/ELEC. MOTOR	22KW	1	GAMAK
8	**GLİSERİNLİ MANOMETRE**/MANOMETER	0-320 bar	4	PAKKENS
9	**BASINÇ KONTROL VALFİ** PRESSURE CONTROL VALVE	RQ4M6-SP	1	DUPLOMATIC
10	**YÖN VALFİ NG10**/DIRECTION VALVE	DS5-S4/11N-K1	1	DUPLOMATIC
11	**YÖN VALFİ NG6**/DIRECTION VALVE	DS3-S2/11N	1	DUPLOMATIC
12	**BASINÇ EMNİYET VALFİ** PRESSURE CONTROL VALVE	MCD6 - SAT/ 51N	3	DUPLOMATIC
13	**YÖN VALFİ NG6**/DIRECTION VALVE	DS3-RK/10N	2	DUPLOMATIC
14	**YÖN VALFİ NG6**/DIRECTION VALVE	DS3-S3/10N	10	DUPLOMATIC
15	**TEK BOBİN YÖN VALFİ** SINGLE COIL DIRECTION VALVE	DS3-SA2/10N	1	DUPLOMATIC
16	**İKİZ KİLİTLEME VALFİ**TWIN LOCK VALVE	VBPDL38	9	DUPLOMATIC
17	**HIZ AYAR VALFİ**/SPEED ADJUSTMENT VALVE	Z2FSK-6-2-1X/2QV	3	REXROTH
18	**HIZ AYAR VALFİ**/SPEED ADJUSTMENT VALVE		1	REXROTH
19	**HAT TİPİ İKİZ KİLİTLEME VALFİ** H TYPE TWIN LOCK VALVE	VBPDL38	1	OLEOSTAR
20	**HIZ AYAR VALFİ**/SPEED ADJUSTMENT VALVE		1	REXROTH
21	**HİDROLİK ÜNİTE**/HYDRAULIC UNIT	-	1	ŞAHİNLER
22	**HİDROLİK ÜNİTE**/HYDRAULIC UNIT	-	1	ŞAHİNLER
23	**HİDROLİK ÜNİTE**/HYDRAULIC UNIT	-	1	ŞAHİNLER
24	**HİDROLİK ÜNİTE**/HYDRAULIC UNIT	-	1	ŞAHİNLER
25	**HİDROLİK ÜNİTE**/HYDRAULIC UNIT	-	1	ŞAHİNLER
26	**ELEKTRİK MOTORU**/ELEC. MOTOR	2,1KW-1750	1	WAT
27	**ELASTİK KAPLİN**/COUPLING	DK28	1	HASEL
28	**DİŞLİ POMPA**/GEAR PUMP	3.5	1	SALAMI
29	**TERMOSTAT**/THERMOSTAT	NT-177-DO TS5 (30°-90°)	1	TEKOSA

HSS 3R HSSx420 HYDRAULIC PART LIST
HİDROLİK PARÇA LİSTESİ

NO	AÇIKLAMA / DESCRIPTION	KOD NO CODE NO	ADET PIECE
1	**YAĞ TANKI** / HYDRAULIC TANK	450 LT	1
2	**YAĞ SEVİYE ŞALTERİ/**LEVEL POWER SWITCH	FSK254-2X/C-12	1
3	**YAĞ DOLDURMA KAPAĞI/** OIL TANK CAP	FT8-C40/1	1
4	**DÖNÜŞ FİLTRESİ**/RETURN FILTER	TEF 320	2
5	**DİŞLİ POMPA**/GEAR PUMP	3Mb55+2Mb16+2Mb6,2	1
6	**ELASTİK KAPLİN/**COUPLING	DK55	1
7	**ELEKTRİK MOTORU**/ELEC. MOTOR	30KW-1750	1
8	**BASINÇ KONTROL VALFİ** PRESSURE CONTROL VALVE	RQ4M6-SP	6
9	**GLİSERİNLİ MANOMETRE**/MANOMETER	0-320 bar	6
10	**YÖN VALFİ NG10**/DIRECTION VALVE	DS5-S4/11N-K1	3
11	**YÖN VALFİ NG6**/DIRECTION VALVE	DS3-S2/11N	3
12	**YÖN VALFİ /** DİRECTİON VALVE	DS3-RK/10N	1
13	**YÖN VALF**İ / DİRECTİON VALVE	DS3-S3/10N	5
14	**HAT TİPİ İKİZ KİLİTLEME VALFİ** H TYPE TWIN LOCK VALVE	VBPDL38	4
15	**İKİZ KİLİTLEME VALFİ**/TWIN LOCK VALVE	VBPDL38	1
16	**TERMOSTAT/**THERMOSTAT	NT-177-DO TS5 (30°-90°)	1
17	**HİDROLİK ÜNİTE**/HYDRAULIC UNIT	-	1
18	**HİDROLİK ÜNİTE**/HYDRAULIC UNIT	-	1
19	**HİDROLİK ÜNİTE**/HYDRAULIC UNIT	-	1
20	**HİDROLİK ÜNİTE**/HYDRAULIC UNIT	-	1
21	**ELEKTRİK MOTORU**/ELEC. MOTOR	18,5KW-1750	1
22	**ELASTİK KAPLİN**/COUPLING	DK55	1
23	**DİŞLİ POMPA**/GEAR PUMP	3Mb55+2Mb16+2Mb2	1
24	ELEKTRİK MOTORLU SOĞUTUCU/ ELECTRIC MOTOR FAN	2050 K	1

MARKA MODEL
ŞAHİNLER
HYDAC
FILTREC
INTERNORMEN
SALAMI
HASEL
GAMAK
DUPLOMATIC
PAKKENS
DUPLOMATIC
DUPLOMATIC
DUPLOMATIC
DUPLOMATIC
OLEOSTAR
DUPLOMATIC
TEKOSA
ŞAHİNLER
ŞAHİNLER
ŞAHİNLER
ŞAHİNLER
WAT
HASEL
SALAMI
EMMEGI

HSS 4R HSSx320 HYDRAULIC PART LIST

NO	DESCRIPTION	CODE NO	PIECE	MODEL
1	**HYDRAULIC TANK**	500 lt	1	ŞAHİNLER
2	**LEVEL POWER SWITCH**	FSK254-2X/C-12	1	HYDAC
3	**OIL TANK CAP**	FT8-C40/1	1	FILTREC
4	**RETURN FILTER**	TEF 320	1	INTERNORMEN
5	**GEAR PUMP**	3Pb22.5+2Pb8,3+2Pb6,2	1	SALAMI
6	**COUPLING**	DK55	1	HASEL
7	**ELECTRIC MOTOR**	18.5KW	1	GAMAK
8	**MANOMETER**	0-320 bar	4	PAKKENS
9	**PRESSURE CONTROL VALVE**	RQ4M6-SP	1	DUPLOMATIC
10	**NG10 DIRECTION VALVE**	DS5-S4/11N-K1	1	DUPLOMATIC
11	**NG6 DIRECTION VALVE**	DS3-S2/11N	1	DUPLOMATIC
12	**PRESSURE CONTROL VALVE**	MCD6 - SAT/ 51N	3	DUPLOMATIC
13	**NG6 DIRECTION VALVE**	DS3-RK/10N	2	DUPLOMATIC
14	**NG6 DIRECTION VALVE**	DS3-S3/10N	7	DUPLOMATIC
15	**SINGLE COIL DIRECTION VALVE**	DS3-SA2/10N	1	DUPLOMATIC
16	**TWIN LOCK VALVE**	VBPDL38	7	DUPLOMATIC
17	**PRESSURE CONTROL VALVE**	MCD6 - SAT	1	DUPLOMATIC
18	**SPEED ADJUSTMENT VALVE**	Z2FSK-6-2-1X/2QV	2	REXROTH
19	**H TYPE TWIN LOCK VALVE**	VBPDL38	1	OLEOSTAR
20	**SPEED ADJUSTMENT VALVE**	Z2FSK-6-2-1X/2QV	2	REXROTH
21	**HYDRAULIC UNIT**	-	1	ŞAHİNLER
22	**HYDRAULIC UNIT**	-	1	ŞAHİNLER
23	**HYDRAULIC UNIT**	-	1	ŞAHİNLER
24	**ELECTRIC MOTOR**	2HP	1	WAT
25	**COUPLING**	DK28	1	HASEL
26	**GEAR PUMP**	3	1	SALAMI
27	**THERMOSTAT**	NT-177-DO TS5 (30°-90°)	1	TEKOSA

4R HSS 320 NC

NC–4X-E 508T v1.4

General Characteristics

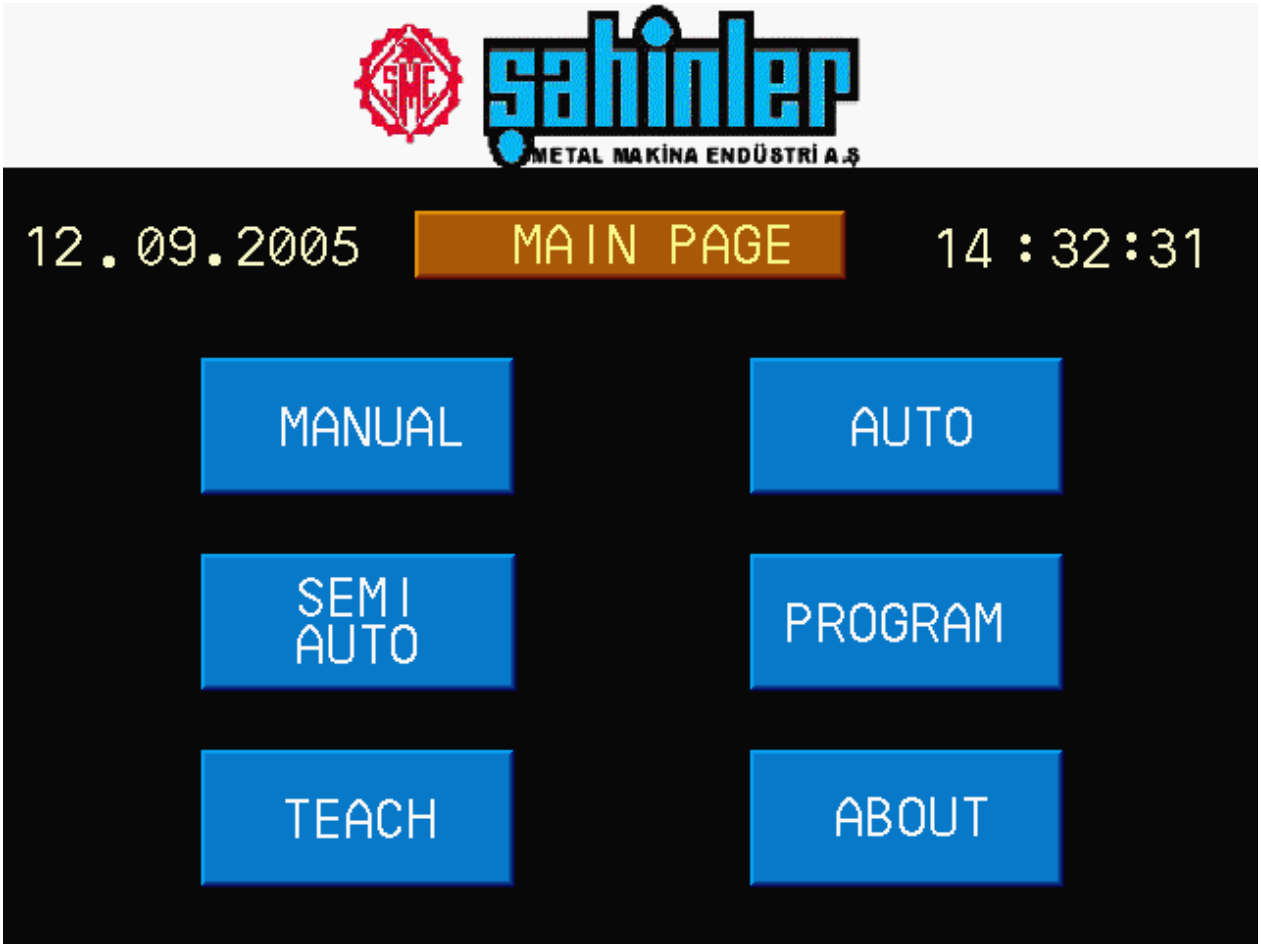
Input	21-30 VDC @ 700mA
CE	Suitable for EN50081-2 and EN50082-2 standards
EMI	FCC Class « A »
Isolation	At 500VDC 50 Mohm
Vibration Stamina	10 between 25 Hz (X,Y,Z ways 2G 30 minutes)
Protection	NEMA 4 / IP65 front panel(O ring stamp)
Temperature	32 between 113 F (0 between 45 C)
Factory Moisture	10 between 90% RH keeps clean

Hardware Specifications

	MT-510S / 510T	MT-508S	MT-509L	MT-506S / 506L
Display	10.4" STN, 256 color LCD /10.4" TFT, 256 color LCD	7.7" STN, 256 color LCD	9.4" blue mod LCD	5.7" blue mod LCD / 5.7" STN color LCD
Resolution	640(G) x 480(Y) nokta	640(G) x 480(Y) nokta	640(G) x 480(Y) nokta	320(G) x 240(Y)
Display	215(G) x 162(Y) mm		196(G) x 150(Y) mm	120(G) x 90(Y) mm
Pixel	0.33(G) x 0.33 (Y) mm			
Back Light	CCFT (MTBF 15 000hour, automatic shut down, changeable)			
Touch Screen	8 wire resistance type, voice alert on touch	8 wire resistance type, voice alert on touch		
Touch Sensitivity	2mm parallel			
Surface Hardness	4H			
Serial Ports	1 RS-232 (controller port) and 1 RS-232 / RS-485 (PC & controller port)			
Memory	4MB DRAM ve 1 M byte flash ROM, upgradable to 2MB			

Parallel port	Standard parallel printer port		No printer port	
Real Time clock	EPSON 72421B option, Y2K compatible			None
System Adjustment	Watch dog timer, power error recognize			
Dimensions H x W x D	**Bezel:** 9.37 x 12.40 x 2.44 inches (238 x 315 x 62 mm) **Cutout:** 8.86 x 11.89 inches (225 x 302 mm)	**Bezel:** 6.93 x 9.09 x 2.16 inches (176 x 231 x 55 mm) **Cutout:** 6.57 x 8.75 inches (167 x 222 mm)	**Bezel:** 9.06 x 11.69 x 1.57 inches (230 x 297 x 40 mm) **Cutout:** 8.39 x 11.10 inches (213 x 282 mm)	**Bezel:** 5.90 x 8.00 x 2.95 inches (150 x 204 x 75 mm) **Cutout:** 5.43 x 7.56 inches (138 x 192 mm)
Weight	Approx.. 2.0 kg	Approx.. 1.3 kg	Approx.. 1.8 kg	Approx.1.0 kg

RUNNING:



NC screen, helps control one axis manual, automatic and semi - automatic modes. You can move the axis with control buttons. Programme memory of the NC unit is 256Kb. 1000 programme memory.

AXIS:

X AXIS: Top roll left and right rotation

Y AXIS: Left Roll Up & Down Movement. (looking from the bracket side).

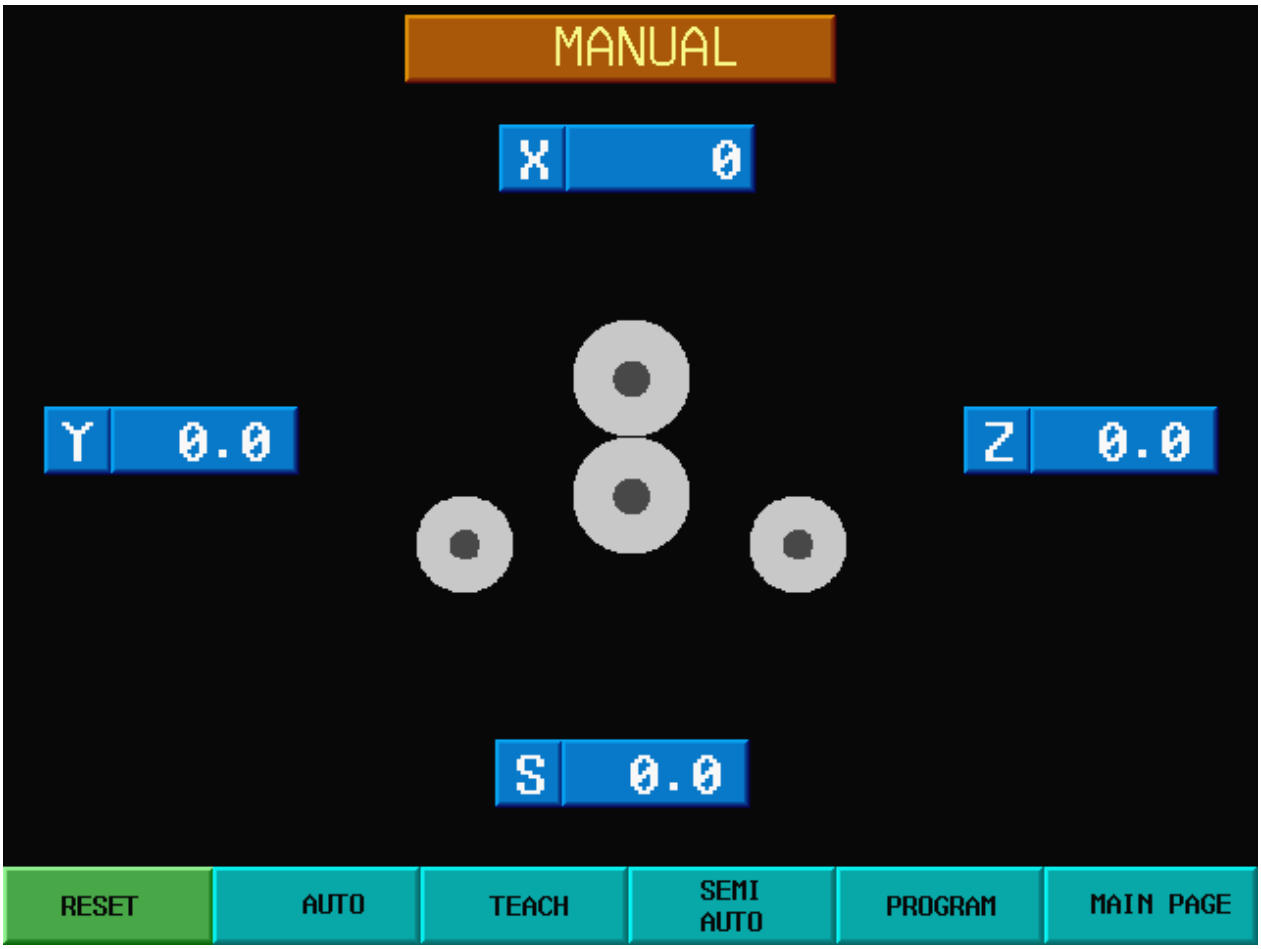
Z AXIS: Right Roll Up & Down movement (looking from the bracket side).

S AXIS: Bottom Roll up & down movement.

NC unit has 5 different modes. These modes are; manual, automatic, semi automatic, teaching and programme modes.

MANUAL MODE:

You can go to manual mode from th Main Page pressing manual button. You can watch the movement of all axis animated in manual mode and move the axis.



- ***RESET BUTTON***:

  Y and Z axis, is decreased until the piston is at the most bottom and S axis is brought to the top. If you want to reset all axis, press the green reset button during 3 seconds on the left bottom corner on the manual screen. When the button is pressed all axis are reset. Axis can be reset up on request at any position of the piston.

- ***Automatic Button****:*

  This button runs “automatic” mode.

- ***Teach Button:***

  This button runs “teach” mode

- ***Semi Automatic button*:**

  This button runs “semi automatic” mode.

- ***Programme Button:***

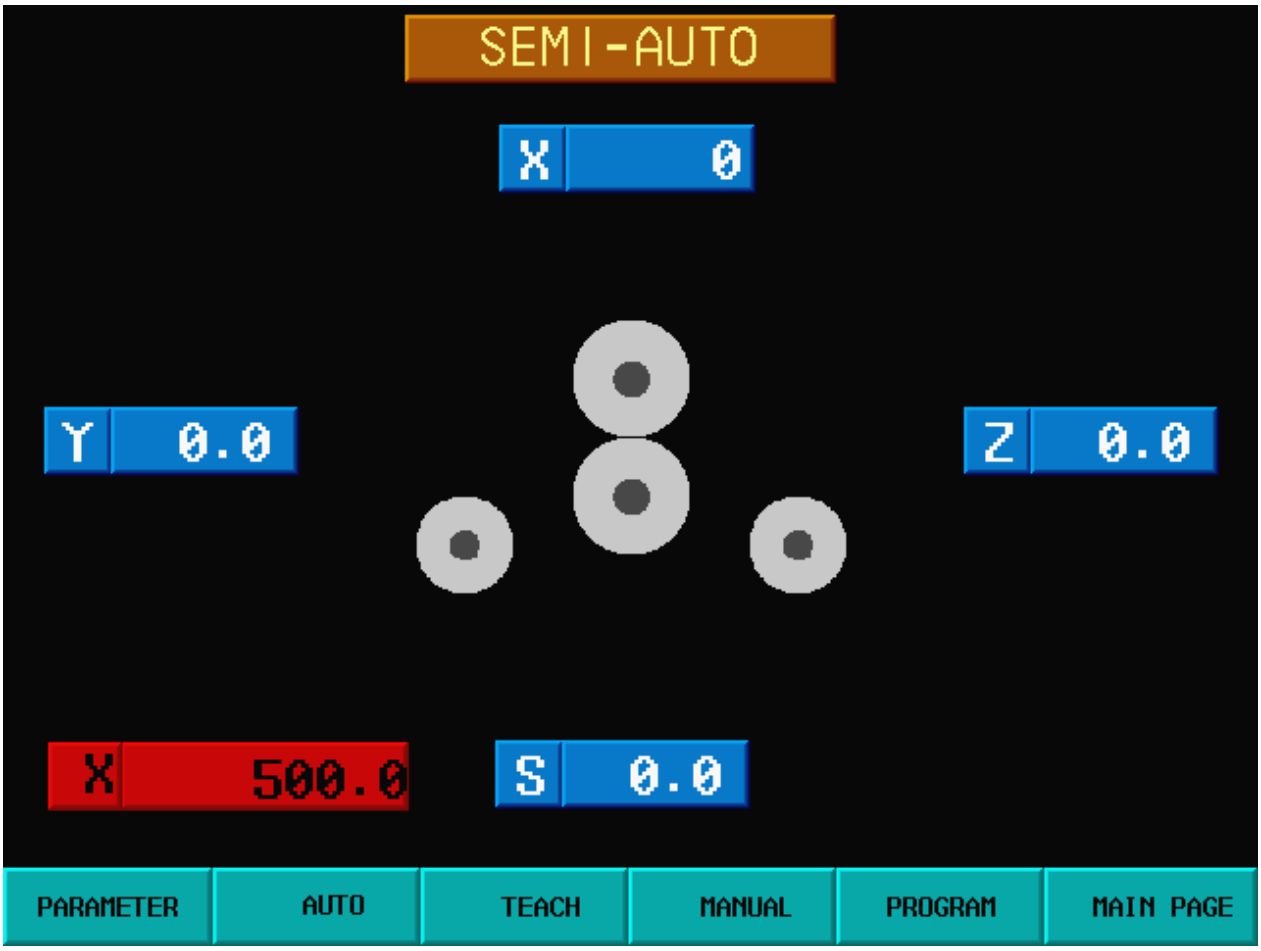
  This button runs “programme” mode and we can modify the programme.

- **Main Page Button:**

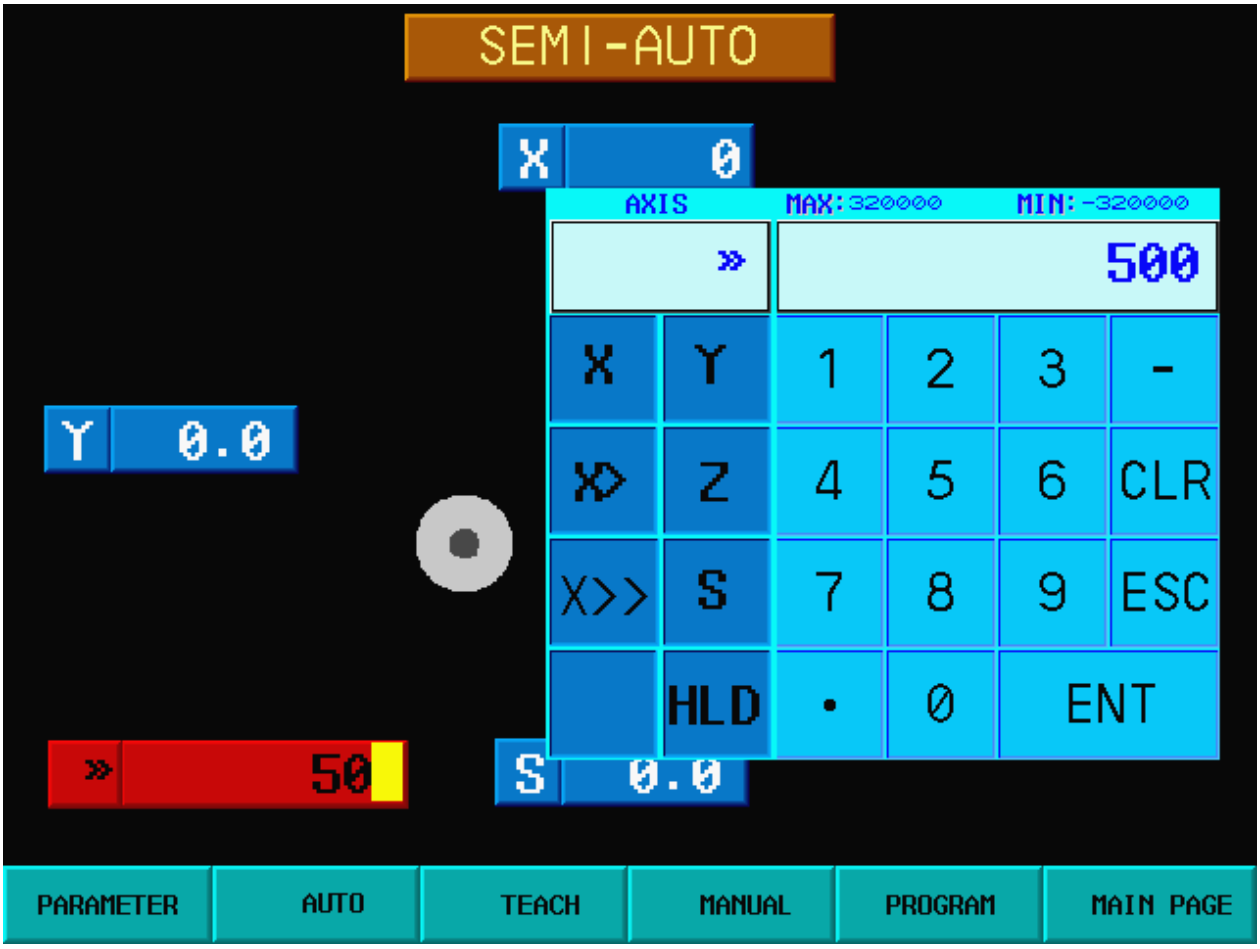
  This button goes to the Main Page.

SEMI AUTOMATIC MODE:

You can go to this mode by pressing semi – automatic buton in the main menu.
This mode tests the movement of the axis and adjusts the parameters

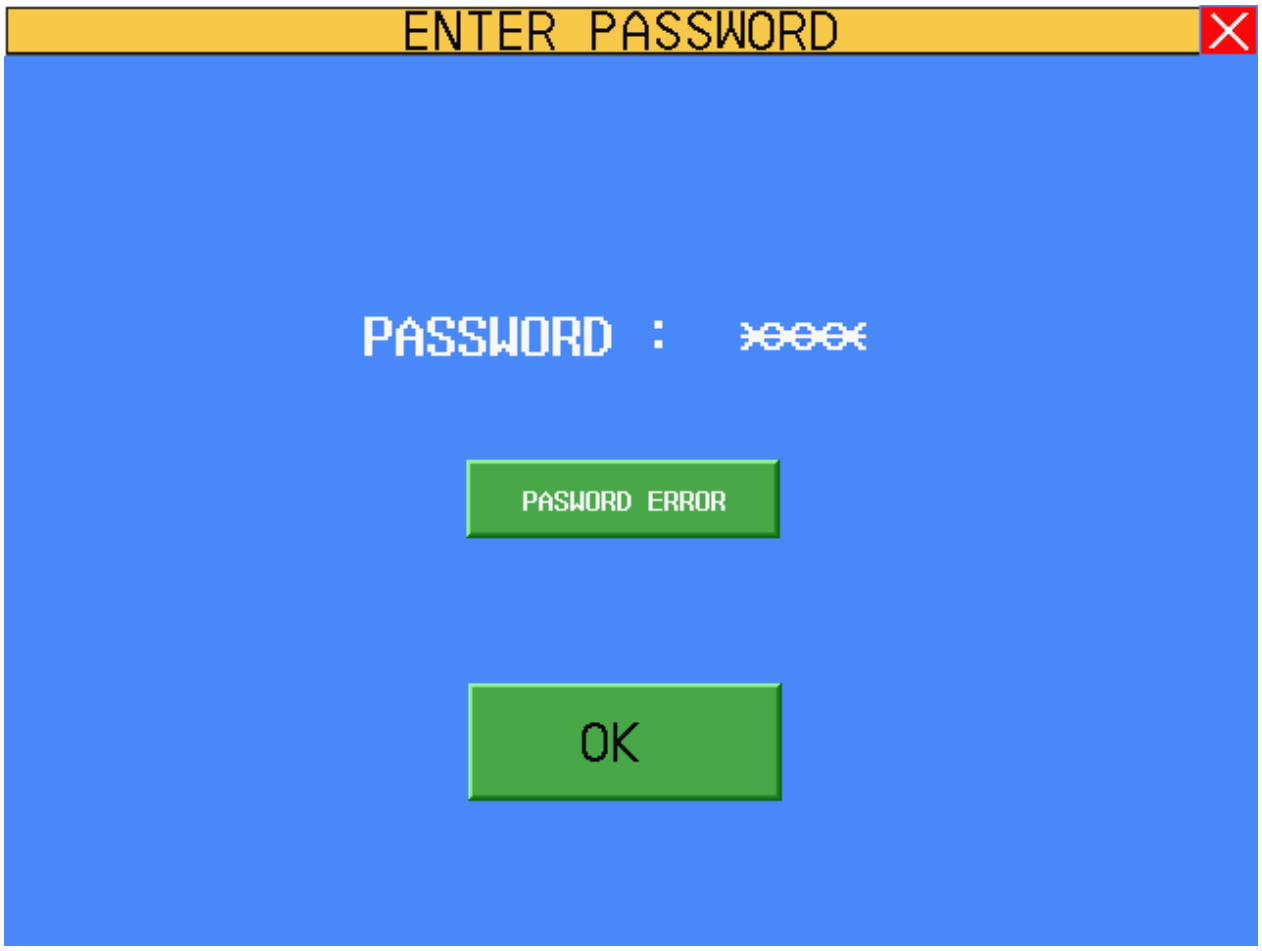


- ***Axis test:***
  Pres the red buton on the bottom left. Axis and numbers are shown on the screen now..Choose the axis and its position values and pres "*ENTER*". Entered value is shown on the red button. Then pres "start" buton to move the axis.



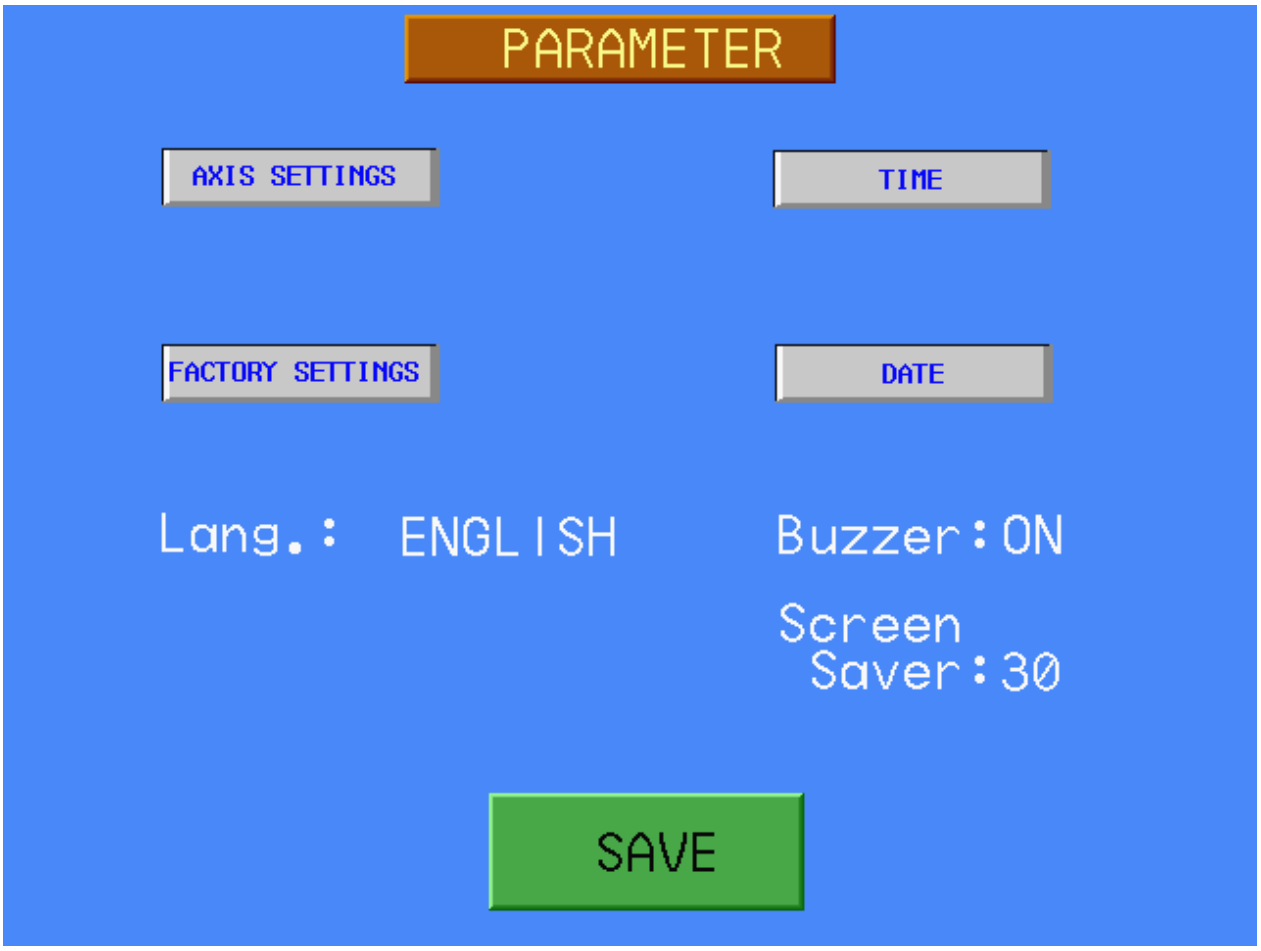
- ***Adjusting Parameters:***

When the “parameter” buton on the bottom left of the screen is pressed you see the password. Touch the number on the screen to enter the password.If the password is correct it is shown “PASSWORD IS OK”. Press ”*OK”* to go to the parameter screen. If you want to quit pres X on the top right.



Password =1953

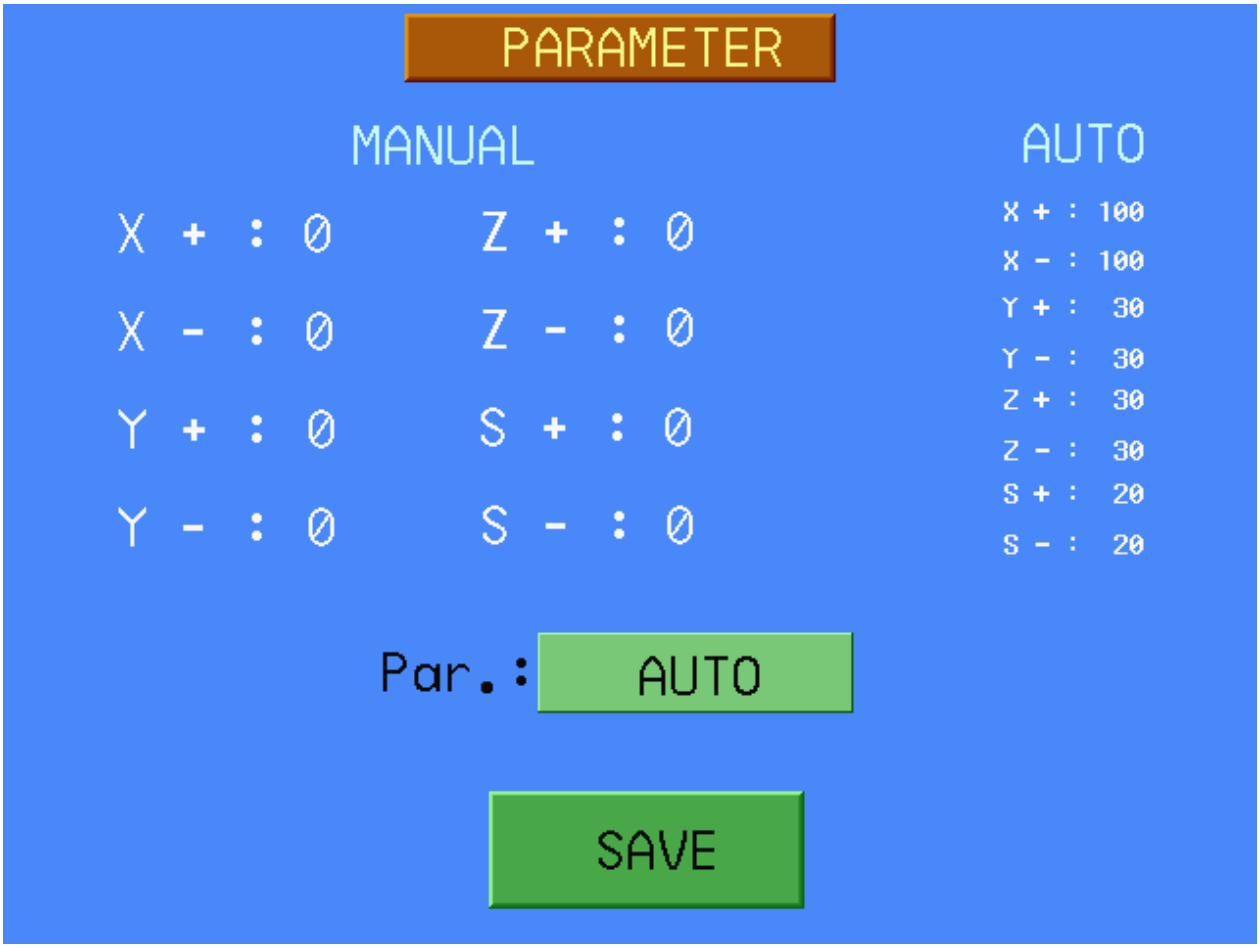
➢ **Parameter page:**



Parameter screen is used to make, adjustment of the sensitivity of the axis, language options, time, date adjustments.

AXIS SETTINGS :

Axis settings screen is used to make adjustment of the sensitivity of the axis. If the MANUAL/AUTO button on the screen is MANUAL mode manual parameters woulb be active. If the switch is AUTO mode NC Unit calculates and updates the parameters.



X (+) : provides movement of X Axis right.
X (-) : provides movement of X Axis left
Y (+) : provides movement of Y Axis upwards.
Y (-) : provides movement of Y Axis down
Z (+) : provides movement of Z Axis upwards.
Z (-) : provides movement of Z Axis down.
S (+) : provides movement of S Axis down..
S (-) : provides movement of S Axis upwards.

Lang. : NC Unit language slection parameter

0 : Turkish
1 : English
2 : German
3 : Russian

TIME : Adjustment of clock

DATE : Adjustment of date

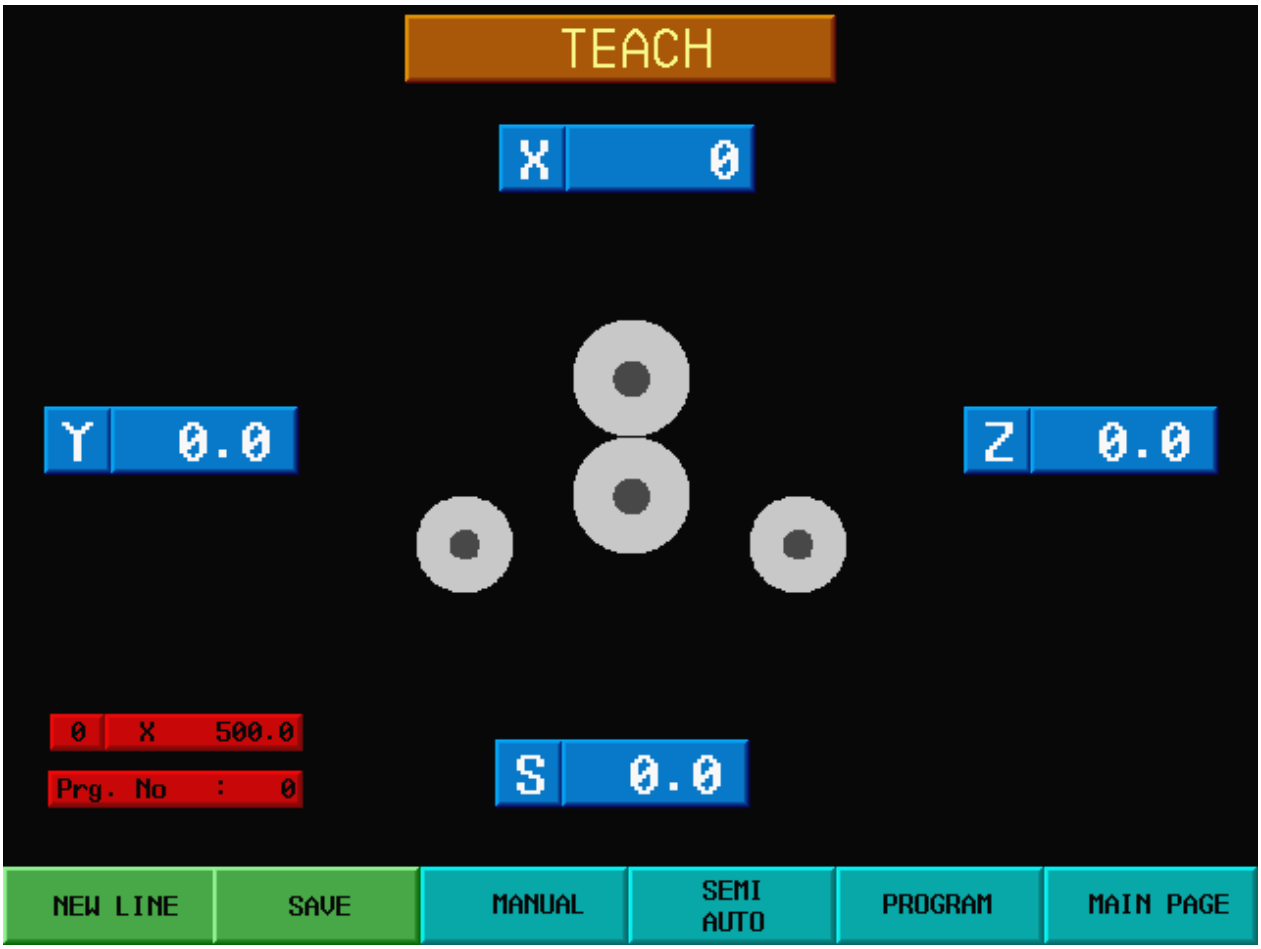
FACTORY SETTINGS: If the password is correct all the parameters change to factory settings. (Password : 2005)

Buzzer : NC Unit souds if the any buton on the screen pressed.
To activate: ‘ 1 ‘ , To Deactivate: ‘ 0 ‘

Screensaver : NC unite stand by the screen to save lifetime of the screen. Screensaver activation time is entered as minute (0 – 255 min.) by this parameter. To deactivate the screensaver : ‘ 0 ‘

After making necessary changes pres “SAVE” buton to go to the main menu

TEACHING MODE:



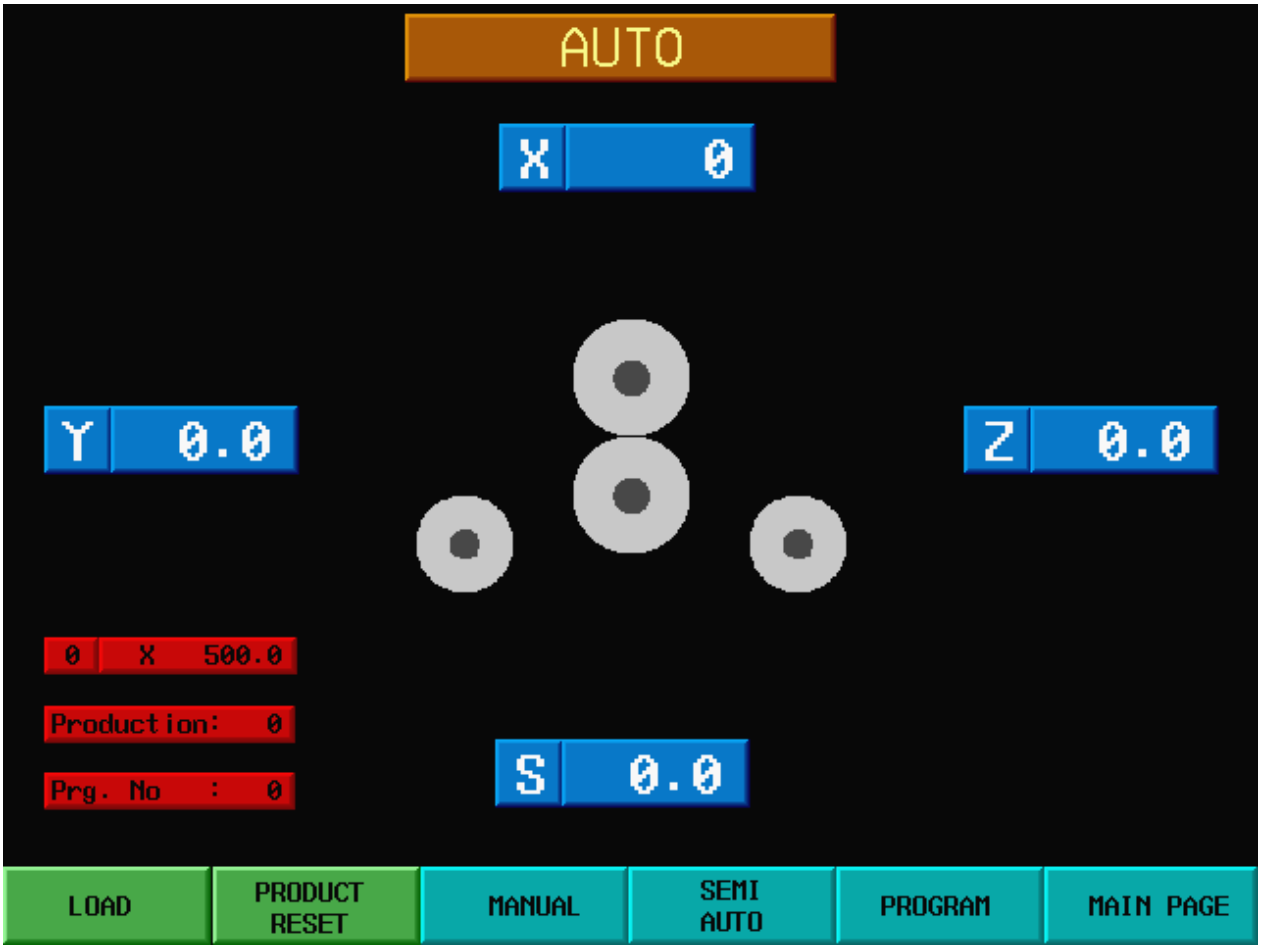
Converts all manual movements to a programme on the NC Unit

First pres *"Program No*" button to give a number to our programme.

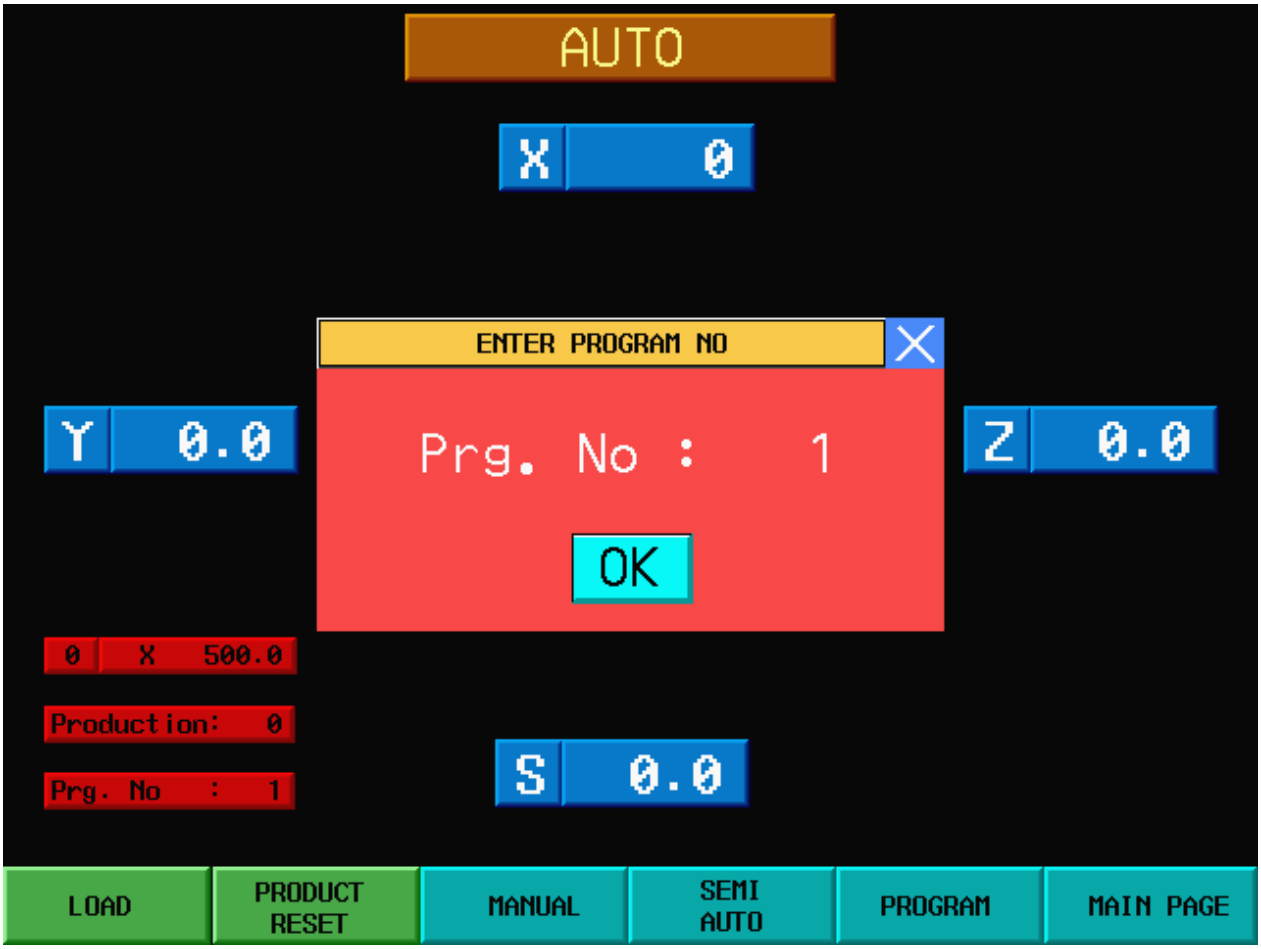
After each axis movement pres "*New Line*" button to add the current linet o the programme.After each movement pres "New line" button. After all movements are done pres "*SAVE*" button and our programme is saved.

AUTOMATIC MODE:

We can run the stored programmes from automatic mode.



Pres “*LOAD*” buton and enter programme number and call the desired programme from memory.



Press the “*Start*” button on the panel to start the programme. You can follow the running line, produced material quantity and programme number from the red indicators on the left bottom corner.

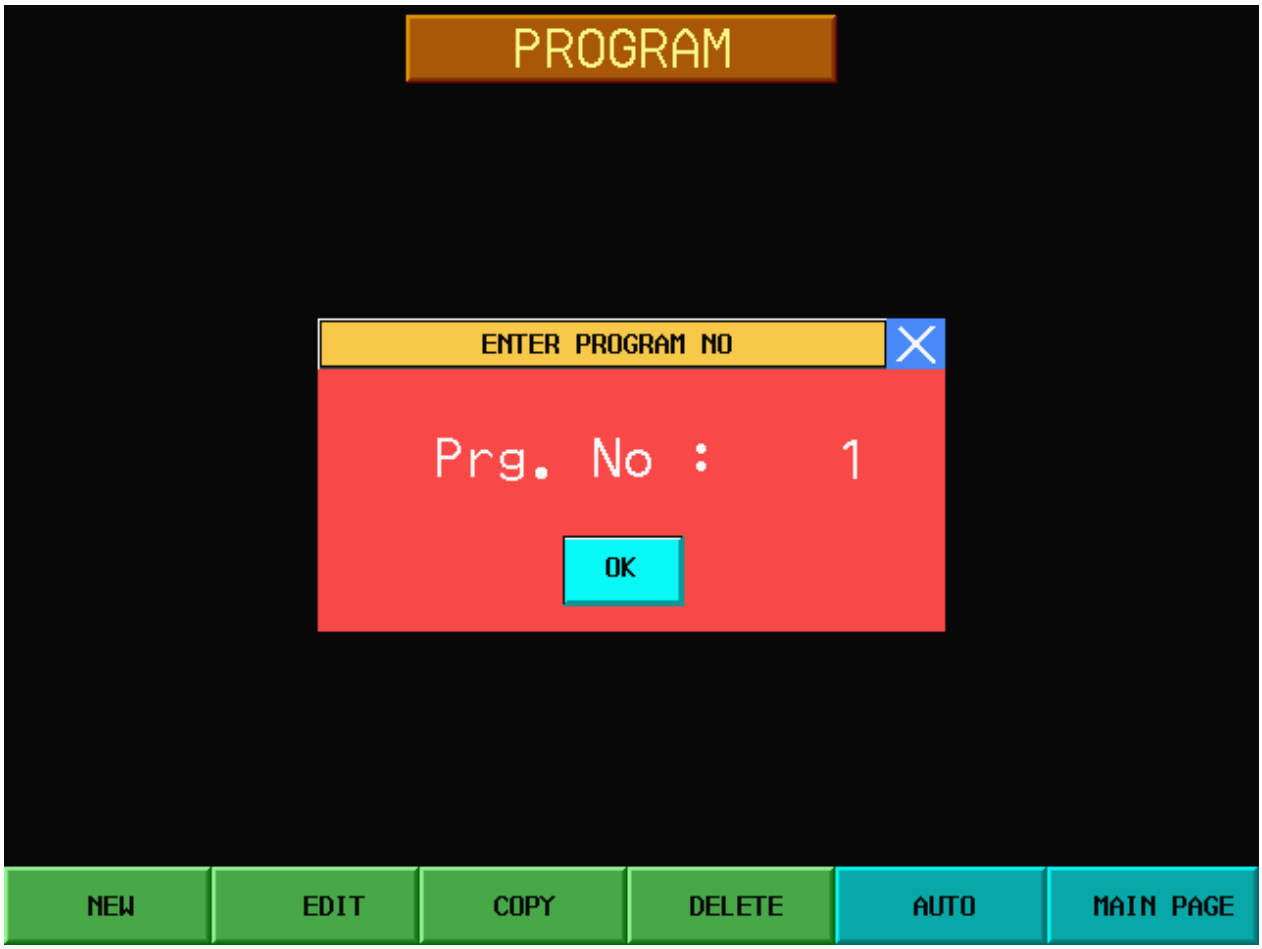
In order to reset the quantity of produced materials press the “*product reset*” button.

Press the “RESET “button on the control panel to pause automatic running anytime. Press “START “button on the control panel to resume automatic running.

PROGRAMME MODE :

1. ADDING NEW PROGRAMME:

Pres “*New*” button. On the screen enter “*program number*” and press “*OK*”.



- Programme writing screen: This screen is 48 lines long and 1000 programmes writable.

- Programme writing : press "*WRITE*." Button, enter the axis and position values on the upcoming screen and press "*Enter*" button. To go to the next line press "*New Line*" button. X axis has 3 mode in automatic mode.

  X Mode : Rotation speed of the roll can be changed manually using "Slow/Fast" switch on the control panel.
  X > Mode : Rotation speed of the roll is SLOW . The speed can not be changed manually.
  X >> Mode : Rotation speed of the roll is SLOW . The speed can not be changed manually.

- Saving a Programme: After writing the last line press "*New Line*" button and then press "*SAVE*".button

- Editing Line: Pres the "edit Line buton to change a stored programme line, Enter the line number, Choose the Axis and position on the screen and press "*OK*" button.

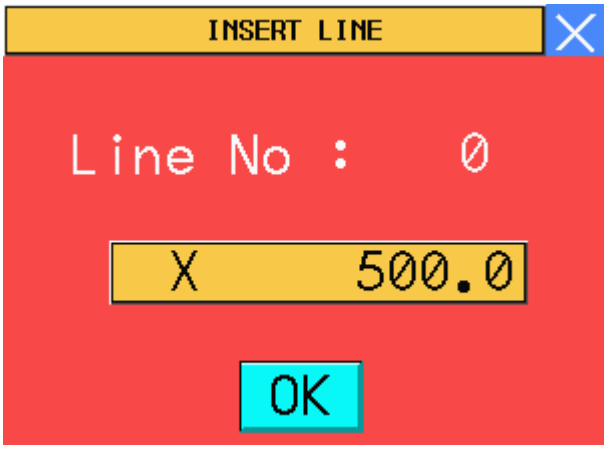
2. EDITING PROGRAMME:

Press “EDIT” in the Program menu. Enter the programme number to be edited press “*OK* “ button. Programme Edit screen is shown on the screen.

- ***Editing a line***: Touch and choose the linet o be edited from the touch screen. Pres “*OK*” button after editing.

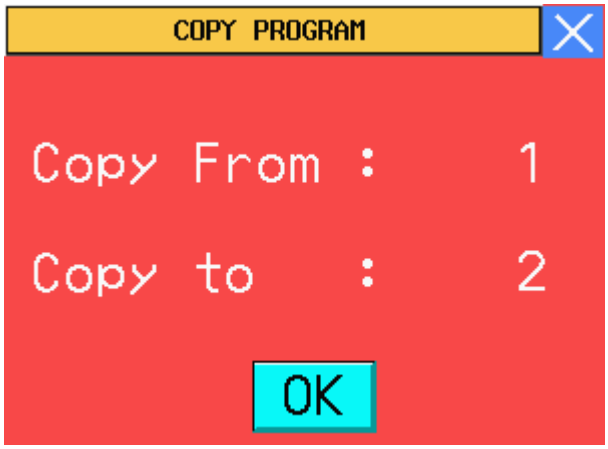
- ***Deleting a line***: Press “DELETE LINE” and enter the line number to be deleted and press “*OK*” button.

- ***Inserting a Line***: Press “INSERT LINE” button enter line number and press “*OK*” button.



- ***SAVING***: Press “*SAVE*” button after making changes to store them on the NC Unit.

3. COPYING:



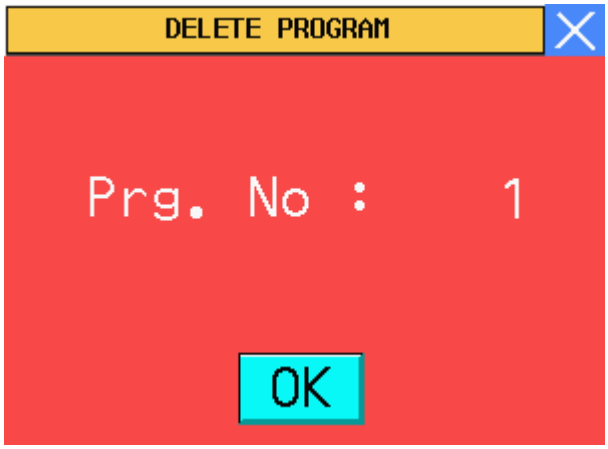
Pres “COPY” button on the screen

SOURCE: Choose the file to be copied.
TARGET: Choose the place to be copied.

Press “OK” button.

4.DELETING A PROGRAMME

Pres the “DELETE” buton on the screen and enter the programme number and pres “OK”



ABOUT

ERROR MESSAGES

All error messages appear on the center of the screen .When the error is solved the error message disappears.